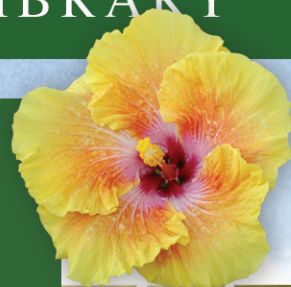


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SCITECH

HISTORY AND RECOLLECTIONS

**SciTech:
History and Recollections of the Science & Technology
Reference Department, University of Hawaii at Manoa
Library, and the University of Hawaii**

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**University of Hawaii Library at Manoa Library
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Introduction

The impetus for this survey of the past began in 2005 with a search among old files for a history of the Science & Technology Reference Department in anticipation of the upcoming centennial for the University of Hawaii in 2007. History reminds us that by knowing our origins, we are able to better appreciate the progress we've made and also to plan for a better future. Those are the two broad goals of this work.

The paper search turned up some notes but no formal history of SciTech. Letters and emails were sent to former staff members of SciTech, informing them of the idea to compile a history of the department and requesting their input. People generously shared their recollections, reflections, and, in some cases, personal photographs of the department. The gathered information was collated and typed into draft form. The draft was shared with the contributors, and their reactions and comments were requested.

It became quickly apparent that SciTech had not developed or existed in a vacuum. As a new component of the Library then housed in Sinclair Library, the Science and Technology Department emerged, grew, and morphed with the changes taking place within the Library as a whole. To better understand the Library's origins and developments, older works published about the Library were consulted, including David Kittleson's detailed accounts, newspaper articles and other sources.

Just as SciTech was a component of the larger Library, the Library became an important part of the larger University and mirrored many of the changes taking place on the UH campus. Much of the early history of the University of Hawaii was gleaned from the following sources: *Malamalama: A History of the University of Hawaii*, *Building a Rainbow: A History of the Buildings and Grounds of the University of Hawaii's Manoa Campus*, Arthur Dean's "Historical Sketch of the University of Hawaii," and articles in Honolulu's two major newspapers.

This report is not intended to be either comprehensive or conclusive. Much of the library and university histories are condensed considerably. Any omissions or mistakes were unintentional on the part of the compiler. It is hoped that readers will be encouraged to expand and improve on this preliminary work.

**SciTech: History and Recollections of the Science & Technology Department,
University of Hawaii Library, and the University of Hawaii**

Beginnings

Nestled in the lush Koolau Mountains, Manoa is one of Hawaii's most beautiful valleys. Its majestic view likely inspired ancient Hawaiians who named it Manoa, meaning "huge" or "vast." The valley was once filled with taro fields and farms. It is also a place associated with several Hawaiian legends, including the origin of the Manoa rains.

One story concerns Ka-hala-o-puna (the hala of Puna), a very beautiful woman who was murdered six times by the same man. Her home was in the area of what is now called Lyon Arboretum. Ka-ua-kuahine (the Manoa rain) was her mother, and her father was Ka-hau-kani (Manoa wind). When her parents heard of her sixth and final death, they transformed themselves into their namesakes, the Manoa rain and wind. People say the frequent rains are her mother's tears.

Another story concerns the great Hawaiian god Kane, who drove his spear into the ground to create the Manoa Stream. The waters of Kane are reported to make old people young and sick people healthy. The mural, named *Water*, created by local artist David Asherman in Bilger Hall, depicts Kane creating the Manoa Stream and his brother, Kanaloa, catching the water. (In October 2004, the Manoa Stream would have a devastating effect on Manoa Valley, University of Hawaii, and Hamilton Library.)

Early Island visitors often were surprised that Hawaiians read and wrote English. However, a decade before the city of Chicago was laid out (1830), missionaries had established schools in Hawaii soon after their arrival in 1820 and taught the three "r's".[1] By the time of the annexation (President McKinley signed the Organic Act on 30 April 1900[2]), Hawaii had 192 schools, 132 of them public. Oahu had four high schools: a public high school (Honolulu High School, later McKinley) with more than a hundred students, and three private high schools: Punahou, St. Louis, and Iolani.[3]

Hawaii did have an institution of higher learning predating the College of Hawaii, but its existence was fitful and short-lived. Missionaries established Punahou School in 1842 to provide more education for their children. It was re-chartered as Oahu College in 1853. Island students, however, were not prepared for college work, and it was not until 1856 that four qualified freshmen were admitted. Financial support for the school later ceased, and the College closed its doors. It reopened in 1858 with five students who finished 2 years of study before transferring to mainland colleges. Nine other students completed collegiate courses before Oahu College was discontinued in 1865. In 1868 the Hawaiian Legislature established a medical school in Honolulu for Hawaiian youths. No qualified applicants were found to take the courses and the school never opened.[4]

An 1882 map of Manoa Valley indicated that one man, Theophilus Metcalf, had initial ownership of much of the Central Campus area. Metcalf, a man of many talents and

careers, has been all but forgotten. The street, which ends at the very center of the UH campus today, is the only memorial for Metcalf. Most of what lies beyond Metcalf Street was once his property.

Born in 1818 in upstate New York, Metcalf was a civil engineer at 21 and a planner for the first railroads in Michigan. Ill health prompted him to move to Honolulu in 1842 at the age of 24. From his early 1845 advertisement, he appears to have been the first Daguerrean photographer in the islands. He was also a surveyor, perhaps the only one in Honolulu in 1843. He developed water facilities in Nuuanu, became a Marshal, and then prison commissioner. He was also a sugar planter on the island of Hawaii. While on a trip to California in 1866, he died at the age of 48.[5]

College of Hawaii's Early Years

For its beginnings, the University of Hawaii is indebted to several New Englanders. Senator Justin Morrill of Vermont had envisioned a system of colleges nurtured by the federal government. The First Morrill Act of 1862, signed into law by President Lincoln, provided grants of land to states for establishing colleges.[6] As a territory, Hawaii, however, did not qualify. The Second Morrill Act of 1890 provided \$25,000 annually to states. But not until Walter Frear, chief justice of the territorial Supreme Court, was appointed governor and asked for a legal ruling from the U.S. Secretary of the Interior whether Hawaii qualified as a land grant recipient did federal funds arrive.

Interest in creating a college came as early as the first (1901) and second (1903) meetings of the territorial legislature when bills to establish an "Agricultural College and Model Farm" were introduced but never implemented. Most resistance to creating a college came from some sugar industry leaders. They were concerned about the effects of a public college on their labor supply and tax burden.[4] The Hatch Act of 1887 established Agricultural Experiment Stations in each state and territory. The Hawaii Agricultural Experimentation Station was established in 1901, six years before the land-grant college was established.[7]

Interestingly, the "orientation" of new campuses was determined by the Morrill Act, which arranged government land along the cardinal points of the compass.[3] Thus the original quadrangle of so many campuses (including UH) is laid out on a true north-south compass base and explains why the first campus building, Hawaii Hall, was built contrary to the natural flow of the island's cooling trade winds.



Wallace Rider Farrington (left)—a native of Maine and editor of the *Honolulu Evening Bulletin*—drafted the concurrent resolution calling for the establishment of a College of Agriculture and Mechanic Arts of the Territory of Hawaii. It was introduced in the 1905 Special Session of the Legislature of the Territory of

Hawaii and adopted on 25 May 1905. Farrington would later become Territorial Governor, 1921-29.

The Commissioners of Public Instruction completed a feasibility study for a college and reported their findings (Farrington wrote the report). Senator Coelho (“Wild Bill”) of Maui introduced two acts that were passed without opposition by the legislature in its regular session of 1907. The first act—the charter of the new college—was approved 25 March 1907, by Governor George R. Carter. The second act, appropriating \$10,000 for buildings and equipment and \$15,000 for operating expenses, was approved by the Governor, 23 April 1907, which became the founding date of the new college.[8]

The Board of Regents held their first meeting in the Governor’s office on 7 May 1907. They faced the daunting task of creating a college having no land, no buildings, no faculty, no students, and no college-building experience. As early as 16 May 1907, the board minutes reported their interest in obtaining the Highland Park tract where part of UH Manoa is situated today. Highland Park was then the private property of Theophilus Metcalf (see above). Sixteen acres of Highland Park were purchased for \$20,000.[9] (Farrington had wanted the College to be built on 200 acres in Waianae Valley.)[10]

The regents also favored the government land of Puahia in Manoa Valley (the area around the present East-West Center). These two sites were well chosen. The Mid-Pacific Institute that later developed adjacent to this area contributed its graduates to the student body of the new college. A new line of the Honolulu streetcar system that ran along Oahu Avenue offered handy transportation for teachers and students living farther away.

□The Territory had recently acquired the Maertens property, facing Thomas Square, as a potential site for a new high school. Instead, it became temporary quarters for the new college. In July 1907 the regents leased a lot from Cecil Brown for \$50 a year on Young Street just south of the Maertens property. The Lucas Brothers were hired to move the old Victorian-style house to the leased lot, turn it to face Young Street, and remodel it. Until the late 1920s, it stood at the rear of Lincoln School and served as an overflow for classes from McKinley High School.[9]



College’s first **football team** practicing on the lawn of the **Maertens House** in 1909.

This single building, once the home of the Chinese Consulate, would

accommodate all of the new college's facilities: offices, lecture rooms, two laboratories, and a library. In early 1908 another wooden building was added at a cost of \$4,320, and the combined 20 rooms would provide space for the new educational venture. A group of prisoners were enlisted to landscape the grounds. The College's first campus was near today's Beretania Street McDonald's.

Twice the regents offered the presidency to Franklin Sumner Earle, director of the Estacion Central Agronomica of Cuba. He declined both times. In October 1907 they selected Professor J. E. Roadhouse of the University of California to run the College. Unfortunately, he died in late November before leaving Berkeley. The regents persuaded Willis T. Pope to take leave from his position as vice-principal of the Territorial Normal School to head the College for its first semester.[10]



□ **Willis T. Pope**, and wife, Blanche, at a UH luau. **Pope** was the first leader of the College of Hawaii in 1907-08.

Late in 1907 the regents discovered that they could qualify for 1907/1908 federal land-grant funds (\$30,000) if the college's classes started before March. On 6 December 1907, the regents hurriedly appointed Willis T. Pope as Acting Dean of the College—effective 1 January 1908—with instructions to prepare

the college for students by February 1908. His annual salary was \$2,000.[11]

Even before accepting the new post, Pope had prepared an itemized list of expenditures (\$1,400) for furniture, lab equipment, and supplies to outfit the Maertens house for classes. On December 30, Pope presented details for a four-year curriculum in agriculture. By January he had written and distributed a thousand copies of a “prospectus” describing the new school and its program, which offered instruction in four fields: science, agriculture, engineering, and household economics. He modeled the new school after his alma mater, Kansas State.[12]

Pope recruited five young men from his agriculture class at the Normal School to form a college preparatory class: “Ching Quon Amona, Simeon K. Domingo, Dewitt Gibson, Ernest K. Richardson, and Alexander R. Tulloch.”[13] Four wanted bachelor's degrees in English and one in agriculture. The students had to take secondary school-level classes because without a high school diploma they were not yet qualified for college instruction. Although they studied 6 days a week throughout the summer, the students did not qualify as freshmen in the fall. Pope was an instructor for agriculture and botany. Reverend W. E. Potwine taught English and mathematics. Geometry, general history, physiology, and drawing were also included. Tuition was free for residents of Hawaii.

After Pope reported to the regents that classes had begun, Governor Frear requested the federal money for which the College now was eligible. The funds arrived 2 April 1908,

making Hawaii's new institution of higher learning the nation's sixty-fourth land-grant college in the nation and its youngest.[14] As former President Arthur Dean said in his Commencement Address of 7 June 1926: "The five young men who enrolled on February 3 appeared to have endowed the college with \$6,000 each." [9] Unfortunately, none of them went on to complete a four-year course of study at the College.

The College's First Library (Young Street)

When the library opened in February 1908, the first five College of Agriculture and Mechanic Arts students and two instructors had access to its entire collection—an atlas, a dictionary, and a 16-volume set of *Encyclopedia Americana*. The College's temporary location was in the Maertens building (former Chinese Consulate). The library occupied the parlor, a 13' x 18' room with French windows opening onto a lanai. A \$5000 land grant enabled the library to acquire its first large shipment of books with an encumbering due date of 30 June 1908. Another book allotment of \$5000 from the territorial legislature did not expire until June of the next year. Pope hired Caroline (Carrie) P. Green, then assistant librarian at the Honolulu Library and Reading Room (later the Hawaii State Library), as part-time librarian for the new library.

Pope and Green spent \$239.65 to furnish "the small library with a desk and chair set, four library tables, twelve chairs, one large bookcase with glass doors, a set of accession record books, a four-drawer card catalog cabinet, and library paste, pencils, etc." The federal grant restricted the purchase of only science books related to agriculture and mechanic arts. The College's first library was essentially a science and technology library. Later, English and economic books were permitted. On June 18th, days before the expiration of the funds, the regents approved the order for books and periodical subscriptions compiled by Pope and Green.

- The Pope Laboratory—between the current Biomedical Sciences building and Sherman Laboratory—is named after Willis T. Pope, the first Acting Dean of the College.

The Public Printing Law of March 1907, designating all land grant colleges as depositories of federal publications, created an unanticipated problem for the new library. Numerous bags of government documents arriving with each mail delivery began to accumulate and quickly filled the shelves. Unopened mailbags were piled in an adjoining room until additional space could be found for their contents.

By July 1908 the storage problem had become a crisis, and the regents decided to construct a separate library building. However, the new building was used instead for classrooms, and the library was left to expand into the existing building. With the addition of a stock room, cataloging room, and librarian's office, the library eventually occupied half of the original building. When the college formally opened on Monday, 14 September 1908, Green had been hired full time and joined the twelve other faculty in welcoming its five freshmen—the five original "preparatory" student—and thirty-one special (non-degree) students. She was paid \$75 per month, approximately half that of the

other instructors' salaries. Over the next four years, part-time students outnumbered regular students by a ratio of five to one.[10, 15]

- John W. Gilmore, professor of agriculture at Cornell, was selected as the College's first president. He had wide experience in the Pacific and Asia and brought with him several faculty from Cornell when he arrived in August 1908.
- Years later other Cornell alumni arrived, including Arthur L. Andrews, the first dean of arts and sciences, and David L. Crawford, who was to be Hawaii's longest-serving president. This Cornell link greatly influenced the developing school.[3]

Concerned that the library collection was predominately scientific, Gilmore felt it should develop a specialty. He asked Howard Ballou of the Hawaiian Historical Society for advice on acquiring Hawaiiana materials. Ballou donated some basic books and provided a list of recommended titles. The library bought the recommended books for \$350 from Thomas G. Thrum, Stationer & Bookseller (now HOPACO). Later that year William Drake Westervelt, a noted Hawaiian scholar, gave a collection of books to the library that now had a separate Hawaiiana bookcase.

In addition to managing the library, Green was required to spend much of her time operating the college bookstore. She received no assistance with either duties. By June 1909 with the territorial fiscal year fast approaching, the library had a sizable balance remaining in its book budget. Green hurriedly submitted an order with Honolulu bookseller A. B. Arleigh for all the books they could supply.



Caroline (Carrie) P. Green, 1st row, 2nd on right. Other 1909 faculty, 1st row (left to right): Vaughan MacCaughey (botany), Arthur Keller (civil engineering), Agnes Hunt (domestic science), J. S. Donagho (math), Green (librarian), Briggs E. Porter (animal husbandry); 2nd row: William A. Bryan (zoology), Raymond C. Severance (physics), John Mason (engineering), President John W. Gilmore; back row: Mildred Yoder (history & economics), Frank T. Dillingham (chemistry), Minnie E. Chipman (art).[9]

The large order purchased 900 books and cleaned out the bookseller's inventory. When the books arrived, the librarian discovered to her dismay that much of the shipment included children's books. By the end of its first year, the library had approximately 5,000 volumes and 7,000 pamphlets, which were mostly bulletins of the Department of Agriculture and agricultural experiment stations.

- The Territorial Board of Agriculture and the Hawaii Experiment Station also contributed many serial duplicates to help build up the library's back files.

In his history of the University of Hawaii Library, Kittelson reported that the library's first book—Henry Sidgwick's *Principles of Political Economy*—"was purchased from Honolulu bookseller E. Herrick Brown & Company on September 12 1908 for \$4.50." Ten days later it "received accession number 1 of the Library of the College of Agriculture and Mechanic Arts of the Territory of Hawaii." [15]

- The Library's first book remained on Hamilton's shelves until the early 1970s when the maroon volume was apparently withdrawn and replaced with a reprint, donated by the family of Michael Wermel (HB171 .S56).

By 1909 enrollment had increased to 13 regular and 51 special students. Faculty numbered 14. The library was busy, crowded and often noisy. Students used it to socialize as well as study. Faculty had student conferences at library tables and even conducted a few classes in the reading room. Barking dogs, playing children, and arguing among neighboring families contributed exterior noises to the learning experience.

- By February 1909, Professor John Mason Young completed a design for the new campus, which strongly resembled the quadrangle of Cornell's campus, Young's alma mater.
- The first football team of students and faculty was organized in the fall of 1909 and played their first game October 23 with a win over McKinley High School.[9]

During the 1909/10 fiscal year, the library spent \$3,879.65 of federal funds to purchase mostly science books and \$3.07 for social sciences and humanities. The library's legislative appropriation went largely for wooden shelves to accommodate the growing collection. At the end of 1910, the library added 2,500 more books. The crowded library had only one librarian to order, receive, catalog, and circulate a collection that had expanded to more than 7,500 books, 8,000 pamphlets, and 100 periodicals.[15]

- In 1910 the students organized the Associated Students of the College of Hawaii (now ASUH).
- Physics students used the *Textbook of General Physics: For the Use of Colleges and Scientific Schools*, 1898; a copy is still on the SciTech shelves.[16]
- In spring of 1910 the first student publication appeared: *The Hawaii Collegian*.

From its early beginnings the library provided services to the public. The library's reading room hosted numerous evening lectures. Hawaii residents were free to borrow books according to library regulations. Years later, the library mailed books to patrons on other islands if they agreed to pay postage both ways and guaranteed the book's return. In cooperation with the Department of Public Instruction, the library started a traveling library that shipped books in wooden crates to the principals of fourteen rural schools throughout the major islands. Green regularly lectured on "The School Library" in a series of Monday afternoon lectures sponsored by the college on school curriculum for elementary school teacher-librarians.[15]

- In 1910 a poultry shed and a cow barn were built on the new campus. Two "temporary" wooden buildings were moved from Young Street to Manoa to serve as the chemistry laboratory and shop. The building housing the chemistry laboratory continued until the opening of Gartley Hall in 1922. The wooden building was the site of the famous

- research on refining chaulmoogra oil (for better administration to Hansen's Disease patients) that brought international acclaim to President Dean, who had continued the work begun by Alice A. Ball (see below), the first and only woman and African American to earn a Master's degree from the College.[17]
- The 1911 legislature shortened the name of the College to what everyone called it—the College of Hawaii. It also appropriated \$75,000 for the new campus' first permanent building.[3] The cornerstone of Main Hall—later renamed Hawaii Hall in 1922—was laid on 22 January 1912. (The cornerstone of native lava rock is actually engraved with the date of “1911”; delays had postponed the ceremony.)
 - Frederick G. Krauss, professor of agriculture, described the heavy labor involved in preparing the Manoa land for the campus which was covered with a tangle of kiawe trees, wild lantana, and panini cactus: “...most of the tillage was done with dynamite and crowbar!...twenty-two acres were cleared...the aggregated rock made a pile at the future site of Hawaii Hall five feet deep, spread over an acre.” The rock was sold to builders/contractors for 10 cents a wagonload. The higher class “moss rock” fetched 25 cents a load.[11]

The quality and availability of the library's scientific collection prompted scientists in local public and private institutions to ask for book ordering privileges since their respective agencies had limited book funds. The regents authorized \$2,500 of the 1910/11 federal book allotment (\$7,000) to be used for off-campus ordering.[15]

- During the 1910/11 academic year, total student enrollment was 112.[18]
- Students in agriculture had their lectures at the Young Street site but did their “lab” work (clearing, plowing, and plantings of the fields) on the Manoa campus.



The College building and surroundings, 1910.

By the spring of 1912 the library's collection of 9,000 books and

9,000 pamphlets had spread beyond the library itself to offices and classrooms.[15] On the Manoa campus, Main Hall (Hawaii Hall) was nearing completion. It would provide 23 faculty offices and house the library, dining, sewing, and locker rooms. Laboratories for instruction about cement, farm machinery, dairy production, home economics, bacteriology, entomology, and zoology were included along with classrooms for English, German and French.[3]

Manoa's First Library Rooms (in Hawaii Hall)

The library was assigned a 40' x 31' room on the mauka side of the first floor of Hawaii Hall and an adjoining 10' x 19' office for the librarian. In August 1912 the library moved from Young Street to Manoa. With classes starting in September and only one student helper, Green devised an expedient moving tactic. Books were tossed haphazardly through an open window unto the flatbed of a truck, and the process was reversed at Manoa. With the occasional help of a janitor, the librarian sorted and reshelfed the entire collection.[15]

- The *Titanic* sank on the night of 14-15 April 1912, drowning 1,200.[19]
- On 3 June 1912, the College's first commencement was held on the steps of Main Hall, facing what would be called the Quadrangle; 4 baccalaureate degrees were conferred: 3 in agriculture and 1 in engineering.[3]
- The public felt college faculty should teach and not do research. With pressure from farmers and politicians, the regents asked Henry H. P. Severin, professor of entomology, not to publish his medfly research. He refused and was fired in 1912. He moved to UC and there published his data on the medfly problem in Hawaii.[7]

Having completed her moving task and apparently not finding the space promising for the new library, Green resigned in 1912 and returned to the Library of Hawaii. Three women applied for the librarian position: Mss. Porrier, Higgins, and Bryan. The president recommended the first two, but the regents appointed Mrs. Elizabeth Bryan. This was the first of several controversies that involved Mrs. Bryan whose husband was William Bryan, professor of zoology, a trustee of the Library of Hawaii, and a frequent Democratic officer seeker.[15]

- President Gilmore, who repeatedly conflicted with the regents and had grown weary of building a college with limited resources, resigned in 1913. Professor Donagho was appointed "Acting Dean" for the years 1913/14.[3]

In February 1914, the librarian resigned over her non-faculty status. Mrs. Bryan held an honorary doctor of science degree from Alfred University of New York and was one of the few on campus with either an earned or honorary doctorate. The regents quickly voted to grant her the rank of instructor. Thanks to her efforts, the head librarian was recognized as a faculty member.[15]

- The Commencement of 1914 was a milestone for the College of Hawaii: it awarded its first advanced degree—a Master of Science (entomology)—and 3 baccalaureates.[9]
- The regents once again selected the new president from the East coast. Arthur L. Dean, an assistant professor of chemistry at Yale with his doctorate from Harvard, arrived in Honolulu on 15 June 1914 to assume the presidency.[8]
- Dirt roads, impassable in rainy weather, wound their way among the campus trees and meandering livestock. Honolulu Rapid Transit (streetcar) had provided a shelter at the Campus Hill stop, where students could wait out the frequent Manoa showers and then contend with the mud. A trail of boot-scrapers—wooden sticks—were left at intervals for cleaning shoes and then stuck back in the ground for the next muddied pedestrian.[11]

- Enrollment dropped from 121 to 105, college finances were poor, and the land grant funds could not cover administrative costs. President Dean had to teach several courses to qualify for his annual salary of \$5,000.
- Engineering professor Arthur Keller designed an all-weather road for the muddy campus that led to Main Hall. The new road freed Dean from driving faculty members to campus on rainy days with his horse and buggy. The 1,600 foot long paved road, completed in 1916, went from Metcalf Street to Maile Way.[3]



Arthur L. Dean, late 1910s.

Professor Joseph Francis Charles Rock, a pioneering botanist, published “Notes upon Hawaiian Plants, with Descriptions of New Species and Varieties,” the College’s first research publication (*College of Hawaii publications. Bulletin no. 1*, Hawaiian S405 .H33).[20] He was fluent in German, English, Hungarian, Chinese, Italian, French, Spanish, Tibetan, Latin and Greek. Appointed to a faculty Buildings and Grounds Committee in 1914, Rock was asked to improve 20 acres of the campus. Over the years, he collected a large variety of plants and seeds from around the world for botanical instruction of students and ornamentation. Before his death in

1962, Rock had created a campus-wide botanical garden.[3] His flora helped beautify a campus not blessed with outstanding architecture. Although no building was named after him, hundreds of plants and birds have been named in his honor. Biological specimens with the species name of *Rockii* or the genus name of *Rockia* are named after the College’s famous polyglot and polymath.[11]



1914 view of the **Library.**

The library continued to grow steadily. By 1915 the collection had expanded to 11,303 books and 12,878 pamphlets. The college proudly reported that the library’s bound volumes of *Engineering News* dated back to 1876 and the collection included “sets of the transactions and proceedings of four national

engineering societies.”[15] The library had started allocating book funds to departments other than science disciplines. English faculty had received their first allotment in 1913.

- College finances improved. The 1915 Legislature appropriated twice as much as it had in 1913. \$16,000 was provided for several needed buildings.
- J. P. Cooke donated funds to clear and build the College’s first athletic field.[9]
- A bachelor’s program in sugar technology was added in 1915 and within 2 years had attracted a fifth of the total student enrollment.[3]



Alice Ball

On 1 June 1915, **Alice Augusta Ball** (left) was the first and only woman to graduate from the College with a Master's degree. She was also the College's first African American graduate. Her thesis was on kava: *The Chemical Constituents of Piper Methysticum* (Hawaiian Q111 .H3 no. 2). While a chemistry instructor at the College (she co-taught a chemistry class with President Dean), Dr. Hollmann, Assistant Surgeon at Kalihi Hospital, asked Ms. Ball to solve a problem that had stymied researchers for centuries: how to make the active ingredients of chaulmoogra oil more therapeutic for Hansen disease (leprosy) patients. She succeeded in isolating an injectable form of the oil but, tragically, died in 1916 without publishing her remarkable discovery. Dr. Dean, her former advisor, continued her work.[17] In 2000, the University honored Ms. Ball with a plaque at a chaulmoogra tree on campus, noting her discovery of an early treatment for Hansen's disease. In December 2006, the Board of Regents bestowed on her posthumously their highest award, Regent Medal of Distinction. Ball's portrait currently hangs in the first floor of the Science and Technology Reference Department.

Over the next two years, several factors threatened the library's functionality. On 23 April 1915, Governor Lucius Pinkham signed Act 140 making the college a depository for all territorial and county publications. Meanwhile, federal documents continued to pour in. An untrained assistant was added to the library to help clear up the backlog of books and documents. On 30 June 1916, the collection had grown to 21,788 books and 19,773 pamphlets—nearly twice the size of the previous year. Student enrollment in the fall of 1916 was double that of two years earlier, resulting in an unprecedented demand for more study space in the small, overcrowded library.[15]

- The Engineering Materials Laboratory was constructed in 1915 and was one of 5 rectangular single-story buildings constructed between 1915 and 1928 that were called the Young Engineering Quadrangle.[11] Four of the old structures remain today in the Campus Center courtyard and house the student newspaper, *Ka Leo*; Student Publications; Beau Press; Board of Publications; and Duplicating Services.

The library was the only place open continually to students from 8:00 a.m. to 4:00 p.m. on weekdays and from 8 to 12 on Saturdays. Students “lived” in the library: studied, did homework, crammed for exams, and attended social gatherings. But as new stacks filled up study space, fewer students could be accommodated in the library. Soon there were but two reading tables for library users. Another room was added for reading space, but it, too, was quickly absorbed by the growing collection.

Although the librarian was known for her “explosive Sssssh's,” students were aware of her “warm and abiding interest in the welfare of the college and of all who were associated with it.” Mrs. Bryan and her husband often hosted and chaperoned student parties, beach outings, and teas. The small College of Hawaii harbored a close rapport between students and faculty.

Study space shrunk considerably, and as stacks were moved closer together, soon there was barely room in the aisles to access the shelved books. Periodicals were moved to another room at the other end of Main Hall. The basement became a storage area for less used items. In 1917 the regents' request for \$75,000 from the legislature for a combined library and auditorium was denied. "The building was thought to be a superfluous expenditure."

In April 1917 Mrs. Bryan reported that 223 books appeared to be missing from the library. However, after deducting losses from rat damage in the old library on Young Street, the traveling library program, the hurried move to Manoa, and withdrawn items, only about 98 books out of 21,788 were lost.[15]

- On 7 April 1917, America entered World War I.
- In 1917 a young man boarded the Manoa Valley streetcar and asked the conductor to let him off at the College of Hawaii:
"College of Hawaii?" the conductor inquired. "You mean Oahu College, Punahou."
"No, the College of Hawaii."
"Never heard of it," replied the conductor.
The 27-year-old man was David L. Crawford, who had just arrived to join the 10-year-old College of Hawaii, with its 37 students, and later would become its third president.[21]

At the end of 1917/18, the library's collection had grown to 23,933 bound volumes, 30,733 pamphlets, and 129 journal subscriptions. Less than half of the collection was in the main library room. Overcrowding and the difficulty in finding library materials may have been the impetus for the development of the college's first "departmental-style libraries": professors' office bookshelves began storing library books essential to their classes and students.[15]

- Concerned about potential disloyalty on campus during the war, the regents asked President Dean to send letters to all faculty, inquiring about their loyalty. Nineteen of the 21 faculty affirmed their loyalty. Dean requested the resignation of an assistant professor of modern language, and the contract for an assistant professor of household services was not renewed.[3]

Prompted by anti-German sentiment during the war years, the regents voted that "the study of the German language be discontinued at the College of Hawaii." After March 1918 all of the German books were relegated to the dark, dank basement. German was not taught again on campus until 1927.[3, 15]

- To assist the war effort, the regents wanted to offer military training. However, before the college received permission to begin a ROTC program, the war ended.[3]

In 1919 a federal education survey commission visited the Islands and included the library in their report. They noted its collection was "a most creditable beginning" for the new college but were shocked by the "critical condition in which there is neither the room to shelve books nor the opportunity for students to properly use them." They recommended a new library be constructed and a doubling of library staff. They also

urged the overworked librarian be relieved of her bookstore duties. Their practical advice fell on deaf ears. The library did not move into a larger building until 1925.[15]

- 1919 brought a financial milestone for the college: for the first time the territorial appropriation exceeded its federal land grant. An additional \$142,000 was earmarked for a chemistry, physics, and sugar technology building, later named Gartley Hall after Alonzo Gartley, a former member of the board of regents.[3]

The newspaper headlines, “One Man’s Dream, Drive Spawned University of Hawaii,” reflected William Kwai Fong Yap’s famous accomplishment. Often called the “father of the University of Hawaii,” he spearheaded a petition drive to change the college to a university and collected a large cross-section of signatures of support. Senator Charles E. King, a noted composer of Hawaiian songs, introduced Senate Bill 76, legislation enabling the creation of the University of Hawaii. Governor Charles J. McCarthy signed the bill into law on 30 April 1919, making it effective 1 July 1920 to give the College more than a year to implement its transformation.[22]

- The William Kwai Fong Yap Room in Hamilton Library is named to honor Mr. Yap for initiating the creation of the University of Hawaii and for establishing the University’s first scholarship endowment—Chinese Community Scholarship Fund.[23] The William K. F. Yap Room is a favorite study areas in the Library for UH students. It was dedicated on 23 October 1982, during the University’s 75th Anniversary.[24]



William Kwai Fong Yap.

Residents and military families stationed in Hawaii continued to enjoy free tuition at the College. Nonresidents paid \$25 per semester. In 1919 the Waikiki Aquarium was placed under the regents. The regents also approved institutional agreements with other research agencies in Honolulu, such as the Bernice P. Bishop Museum that allowed reciprocal use of libraries, laboratories and collections.[3] Mrs. Bryan died in 1919 and Clara Hemenway, sister of one of the regents, was appointed the new Librarian and served until 1928.[15] A liberal arts curriculum, introduced in the fall of 1919, led to a 67% increase in enrollment over the previous year.[10]

On 1 July 1920, the College of Hawaii became the University of Hawaii. The institutional seal changed from the image of a ship off Diamond Head seen through academic portals to a lighted torch on a book entitled “Malamalama.” While the new symbolic emphasis on the printed volume was a fitting image for the university, it did not reflect the real condition of the overcrowded library. The library that in 1912 had served 24 students and housed 9,000 books and 9,000 pamphlets in a 40’ x 31’ room now served a university with 242 students and was crammed with 25,709 bound volumes and 40,000 pamphlets, having gained only the extra space of an adjoining 190 square foot room.[15, 25]

- Students collected \$20,000 for the construction of a swimming pool that was built in 1921 east of present Hemenway Hall.[3]
- The University was composed of 2 colleges: College of Applied Science (93 students) and College of Arts and Sciences (62 students).
- On 15 December 1920 the UH football team met its first intercollegiate opponent, the University of Nevada, and lost by two touchdowns.[26]

Over the next couple years the library staff slowly increased to three. Francis Wiggins, a new cataloger, was hired in 1921. Her first year was spent re-cataloging all of the library's bound volumes. Mary Pringle, who became the Associate Librarian, was hired later with the rank of instructor. She noted the overcrowded condition: "It was too crowded to have any chairs so the students sat and studied on the two step ladders on the floor between the stacks." To assist its users, the library began to regularly publish lists of new library books in the student newspaper, *Ka Leo O Hawaii*. [25]

- The first ROTC unit was established on campus in fall of 1921 under Col. Adna G. Clarke.[27]
- UH's first dormitory, a simple wooden building housing 26 men and named the "Boiler Factory," was built in 1921. Lodging was \$36 per semester.
- A small cafeteria was built in 1921 on the Diamond Head side of the campus (near the back of present George Hall) and offered lunch for 37 cents. Members of the newly formed Women's Faculty Club also served lunch at an alternative cafeteria on the lanai of Hawaii Hall.
- In 1921 Frederick W. Beckley taught the first introductory course of Hawaiian.[3]

The name of Main Hall was formally changed to Hawaii Hall in 1922. *Ka Leo* editorials chided the library for its reserve room loan policy and its lack of library evening and Sunday hours. The library tried to assist students in other ways. A typewriter was made available for student use with a fee of ten cents an hour and an ink well filling station for fountain pens—"one penny per dip"—was located at the circulation desk (called the "charging desk").

The library staff continued to participate in community professional activities. In 1922 Ms. Hemenway was elected president of the newly created Hawaii Library Association. By 1923 the funding problem for the new library had been solved, and the Territory was authorized to sell bonds for its construction. Initial plans called for a combination library and auditorium, however, it was decided to build only a library. The new floor space equaled 21,200 square feet as compared to 1,430 square feet in Hawaii Hall. In March 1924 a contract was awarded for the two-story, \$125,580 building.[25]

- In the mid-1920s the University of Hawaii had almost 1000 students, more than 50 faculty, a proper library (later named George Hall), a student organization (ASUH), a newspaper (*Ka Leo*), a yearbook (*Ka Palapala*), an alma matter song ("In Green Manoa Valley"), a school band, school colors (green and white), and a football team ("The Fighting Deans").[3]

UH Manoa's First Library (George Hall)

The entire campus rejoiced in 1925 when the new Library Building was completed. It was the University's first building devoted to books and library services. The new library's ground floor included staff offices and conference rooms arranged on three sides around the central stack area that was a stand-alone steel tower of floors. The central stacks required a special foundation to hold the weight of the tower of steel frames and books. The stack floors were seven feet high and covered with frosted glass to block peering up women's dresses from below. Metal stairs connected the stack floors. The second floor (mezzanine) lobby, circulation (charging desk), and study rooms were arranged around the central stack area. The library could hold 100,000 volumes and the library seated 120 patrons at tables.

Friday, 11 March 1925—library moving day—was declared a university holiday. Under the supervision of the ROTC commander, students carried the books from the old library to the new one in three sections: periodicals to the ground floor, general collection to the main floor (stacks), and government documents to the second floor mezzanine. On March 19th the new library was officially opened, attended by Governor Farrington and members of the Territorial legislature.[25]



Kaui Wilcox is seated on one of the **trays** used by the ROTC students to transport books from Hawaii Hall to the new Library Building. The **student** on the **right** is one of the **sons of William Kwai Fong Yap**, who had initiated the petition that resulted in the College of Hawaii becoming UH.

Clara F. Hemenway, head librarian, noted, "So accurately and carefully was the moving work done that the new Library was at once ready for service, and it was not necessary to close for the purpose of putting the books in order." It took less than 8 hours to move all the books and periodicals to their new

home.[11]

- The graduating class of 1926 revealed some surprises: one third of the graduates were women. The ethnic makeup included 24 Caucasians, 14 Japanese, 10 Chinese and 6 Hawaiians. Among the seven Punahou graduates was Beatrice Himler Krauss, future ethnobiologist who had a life-long affiliation with the University.[3]

In addition to the new library's collection and study space, there were other unusual attractions for students during its early years. Without a gym or auditorium on campus, numerous dances were held in the library lobby. From nine to midnight, the quiet of the

Library gave way to dance bands, green and white banners, balloons, refreshments, and even bouncers.[25]

- Dean announced his resignation as president in 1927. David L. Crawford, entomologist, was selected to succeed Dean. Crawford, aged 38, became the youngest university president in the United States.[3]
- UH attained two levels of academic excellence during this time: by 1928 it had achieved accreditation by the Association of American Universities and its degrees and course credits were recognized throughout academia. Its first doctoral program in tropical agriculture was established in 1931.[28]
- Student enrollment exceeded 1,000 and more than 100 degrees were granted.[3]

Mrs. Cynthia B. Geiser of the library staff responded to requests from high school principals and began offering library courses to teacher-librarians. She continued this training until 1947 and is listed in the UH *Bulletin* as Assistant Professor in library science up to May 1964.[25, 29] Librarian Hemenway went on sabbatical in 1926/1927 to visit mainland libraries to study advances in library management and government document collections. Upon her return she was promoted to assistant professor. She resigned in early 1928. Acting Librarian Mary Pringle became Librarian and served another 15 years until 1943.

President Crawford actively expanded the University and made a special effort to strengthen the Library. It quickly began receiving 4.9% of the University budget, compared with the 2.5% received by other land grant colleges. Later, this figure reached 6.1%. Library staff grew from three in 1923 to eight in 1927. By 1927 the Library had 46,885 bound volumes and 138,162 unbound items. Among land grant college libraries, the UH Library ranked second in the number of books checked out per student.[25]

- In 1928, registration was \$10 per semester for local residents and \$25 for non-residents.[7]
- The Biological Sciences Building, built in 1928, was later named Dean Hall after UH's second president. The first gym went up along University Avenue just makai of the present Sinclair Library.[11]
- The Great Depression of 1929 that began with a stock market crash had less dramatic effects in Hawaii. Local banks did not fail and there was no panic. Military expenditures helped to offset losses in sugar, pineapple and tourism for awhile.[3]

The rapid filling of the library prompted President Crawford in 1929 to request an addition to double the library's floor space. A depressed economy held up its construction until 27 April 1936, when the "L" shaped addition was finished. In the nine years since 1927, the collection had doubled to 91,673 books and 290,760 pamphlets, and library staff increased from 8 to 15. Student enrollment nearly doubled from 836 to 1,494.[25]

The Depression eventually brought cuts to the library's book funds and salaries. Federal funds, however, proved helpful in paying 30% of the cost of the library addition. Federal Emergency Relief Administration funds enabled student help to compile a union catalog of Hawaiian books and pamphlets held in several Honolulu libraries, including the UH Library. Student help funded by the National Youth Administration compiled a union list

of periodical holdings in Honolulu libraries. Under the federal National Youth Act, Manoa students were paid \$15 a month to work in the library.

- In 1930 tuition increased to \$15 per semester (\$40 for non-residents).
- Students, faculty and alumni raised \$2,664 to construct the Founder's Gate across University Avenue. It was built to mark the merging of the University of Hawaii and the Normal School in 1931 that created the Teachers College. When the 2-lane avenue was widened to 6 lanes, the two halves of the gate were moved to their present locations.[3]
- A 25 September 1931 *Ka Leo* editorial noted that with the addition of the graduate school of tropical agriculture the university for the first time "will confer a limited number of doctor's degrees." [30]



2nd floor balcony of the Library Building (George Hall) overlooking the Quadrangle, early 1930s.

As early as 1927, about 1,500 books and pamphlets about Hawaii were re-cataloged in a separate collection and steel bookcases were purchased for them. Because of the heavy use of the Hawaiian books and their increasing value, they were housed in a seminar

room in the Library. By 1932 the Hawaiian room was full, and two years later it was so crowded that its books were shelved in double rows on the shelves.

Janet Bell became head of the Hawaiian Collection in April 1935 and during her 35 years of service built up the collection to almost 50,000 volumes.[31] In 1937 William Drake Westervelt donated to the library a collection of 967 items of rare Hawaiian and Polynesian literature. His collection was considered one of the finest of its kind in the world.

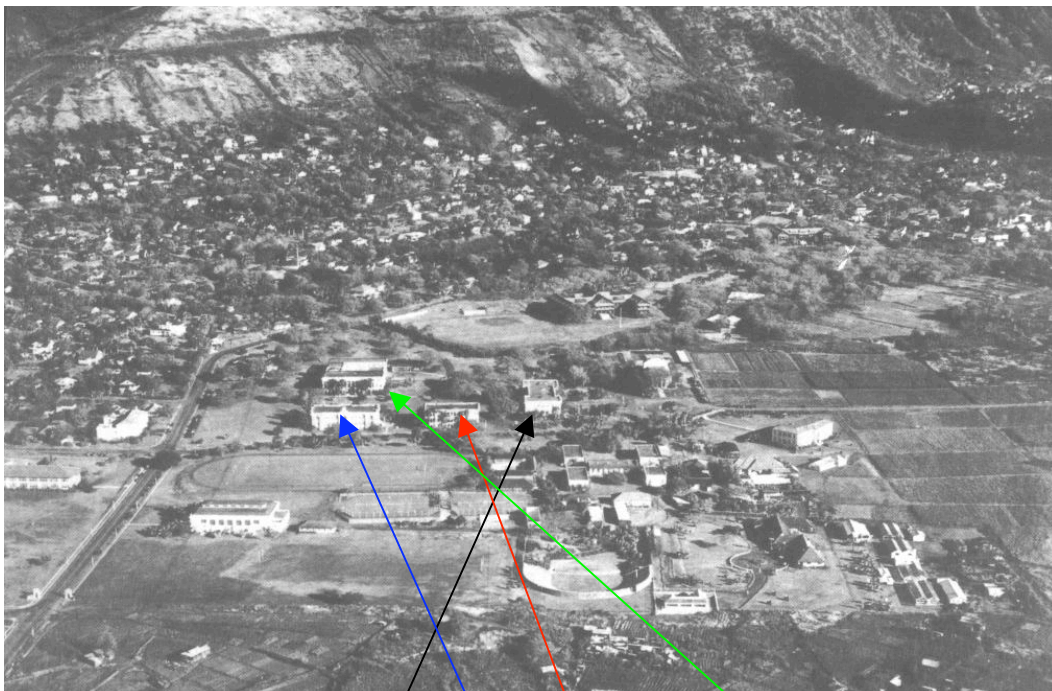
The University was aware of its special role in Pacific relations. President Crawford urged the library to expand its "Oriental collections," and a special room was designated for the growing Oriental collection. By the end of 1932, the room was full. The Oriental Collection at the time ranked sixth among American college libraries. After the merger of the Japanese and Chinese departments to form the Department of Oriental Studies, a School of Pacific and Oriental Affairs was created in 1931. The department and school combined in 1935 to form the Oriental Institute.[25] Both the Hawaiian and Oriental Collections became special units within the Library, each with its own rooms, staff, books, and catalog.

- A curriculum in nursing began at UH in 1932 to train public-health nurses.[3]
- UH awarded its first PhD in 1933 to John S. Phillips for his study of ants (*The Biology, Distribution and Control of Ants in Hawaiian Pineapple Fields*).[7]
- Varney Circle and fountain, designed by local artist Henry Rempel with *tiki* motifs, was added in 1934 and named for Ada Susan Varney, longtime history instructor at the old Normal School.

- Free labor by inmates of Oahu Prison built storm drains, stone retaining walls, sidewalks, and maintained the campus lawns for several years.[3]
- Andrews Outdoor Theatre, built in a natural depression that had been a garbage dump, and Old Gilmore Hall, where the Art Building stands today, were both constructed in 1935.[11]

On 27 April 1936, the “L” shaped addition to the Library was formally completed. It provided space for reserve and reference rooms, a new Hawaiian room, stacks, and offices. The Institute of Pacific Relations and the Oriental Institute occupied the top floor. The Institute had its own library within the Library.[32-34]

- Chairman of the Board of Regents, Charles R. Hemenway, reported on the rapid growth of the college in 1936: “When the College of Hawaii opened its doors to five students twenty-eight years ago, few, if any, visualized the present University with an undergraduate enrollment of 1551, with three colleges, several special departments for graduate study, a psychological clinic, a well-organized and active experiment station and an agricultural and home economics extension service reaching every part of the Territory.”[8]



1936 Aerial view of **Manoa** and the **University of Hawaii**; except for Crawford Hall, the Quadrangle is complete: **Hawaii, Dean, Gartley, and George [Library] Halls.**

In 1938 two campus buildings were added. The Social Science Building (later Crawford Hall named after David Crawford, UH’s third and youngest president) completed the Quad’s five low-rise, white, flat-roofed structures. The Union Building, the first major campus building set aside for non-academic activities, went up across from the Quad and provided a cafeteria and offices for student organizations, including *Ka Leo*. Howard Verbeck, noted designer of Shirley Temple’s home, designed its interior. In 1940 it was

renamed after Charles Hemenway, who had served as a regent for 30 years.[11] By 1938 the campus had grown to 209 faculty, 16 librarians and 2,669 students.[3]

- A regents' report noted that only 14% of incoming UH freshmen in 1939 and 1940 used "typical American speech." Efforts at "dialect correction" (pidgin) at Manoa continued until the 1960s when the state Department of Instruction assumed the responsibility.

Crawford's fourteen-year presidency ended on 2 October 1941, when he was forced to resign over an apparent conflict with the Board of Regents. He left Hawaii on 5 December 1941 (2 days before Pearl Harbor) and did not return until 1957, when he received an honorary doctorate as the University celebrated its 50th anniversary.[3] Crawford had been very supportive of the Library and had helped it attain excellence in specialized research areas. Arthur Keller, dean of the College of Applied Science, became acting president.[25]

World War II

The Sunday morning attack of 7 December 1941 plunged America into war. While bombs and aircraft shells fell about a mile away from the Manoa campus, World War II greatly impacted the University in other ways. UH was closed for two months and functioned on a wartime basis until 1945. Hemenway Hall and Klum Gym became evacuation centers. The Army Corps of Engineers took over many other buildings (the Library was spared) and dug up the campus for air-raid trenches and bomb shelters.[3] Land adjacent to present Hamilton Library was readied as a mass burial site for casualties from an anticipated Japanese invasion that thankfully never occurred.[35]

The military governor converted the Manoa ROTC into the Hawaii Territorial Guard (HTG), which remained on duty for 2 months defending buildings on Oahu. They were the only ROTC unit in the nation to serve actively in World War II.[3] Although UH classes did not resume until 4 February 1942, the Library opened as usual on Monday, 8 December and continued to keep regular hours except for closing early at 4 pm. Night classes were cancelled due to the island-wide blackout.[25]



Air raid shelter (mound, above) behind Hawaii Hall. The mound of the shelter was covered with sweet potato plantings, both for camouflage and an emergency supply of food: the vine tips, tubers, and flowers are edible.[11]

- The second-generation Japanese Americans, or *nisei*, of the ROTC unit were most profoundly affected by the war. On 19 January 1942 all HTG members of Japanese ancestry were discharged by the military without notice or explanation. Their draft status became 4C: enemy alien.
- English faculty worked as censors of civilian mail that had been accumulating since December 7.[3]
- The Library, with the largest collection of scientific books and periodicals in the territory, supplied the armed forces with materials about the Pacific and the Orient.[11]
- Everyone on campus was required to carry a gas mask and take cover in air raid shelters when sirens sounded. The 1942 graduating class marched into Andrews Outdoor Theatre dressed in black caps and gowns with khaki gas masks slung over their shoulders.[3]
- More than twenty-five percent of UH faculty were active in war work.[36]

Wartime conditions prevented a national search for a new president to succeed Crawford. It would have been impossible to attract someone to a school in a war zone operating under the constraints of martial law. Professor Gregg Manners Sinclair, founder of the Oriental Institute in 1935, became president in July 1942.[3] His inauguration, postponed until October, was UH's first formal inauguration ceremony. For various reasons, including shortage of funds, the previous three presidents—Gilmore, Dean, and Crawford—had been denied inaugural ceremonies. They simply showed up for work without any fanfare. Thomas Hamilton's 28 March 1963 inaugural was the first to be televised.[37]

- By 1943, 22 academic departments offered courses in 36 subject areas.
- By June 1945, about 3,500 students were enrolled for classes, half of which were members of the armed forces. Another 1,000 took noncredit courses. [3]
- During the war years, the Library in cooperation with the English Department offered 3 hours of bibliographic instruction for freshmen.[35]

Mary Pringle resigned as Librarian in 1943, having served 21 years as librarian and head librarian. When she came to the university in 1922, the library consisted of one room, a collection of 13,000 volumes, and a staff of three.[38] **Carl G. Stroven** from the English department and Stanford alumnus became the 5th University Librarian. He remained in



charge of the library for 23 years, becoming the Library's longest-serving Librarian (1943-1966).[39] His interest in and scholarly command of Pacific Islands' matters helped focus the library in this new area. He had a staff of 12 librarians.[3] **Stroven's** portrait (left) hangs in the Library Administration offices.

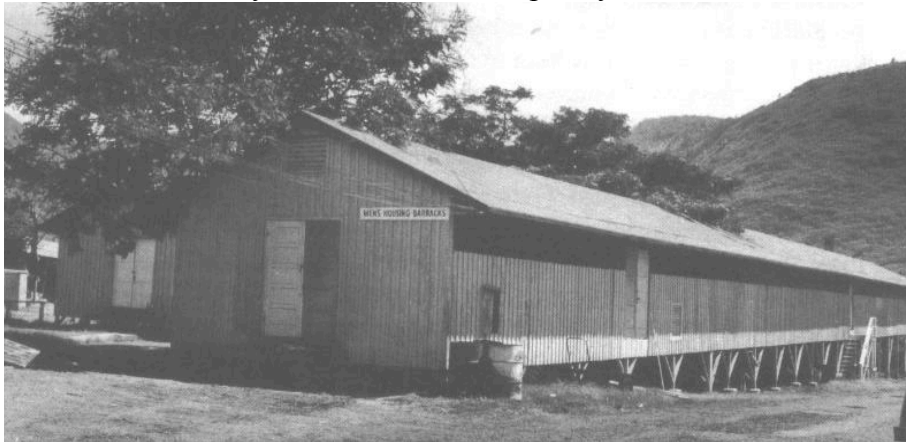
- Miss Gale Etsuko Sakai became the Library's first full time government documents librarian. Her hiring, however, was delayed by an investigation by the FBI (she was Japanese) and a clearance by

the naval office in San Francisco.[40]

After WWII the University faced a disheveled campus, depleted faculty, rising student enrollment, but no new buildings. The GI Bill of Rights offered veterans financial support that covered tuition (\$50 a semester), books, supplies, and some spending money. The vets helped to change the provincial character of the campus. Prior to the war, only a few privileged students had seen the world outside Hawaii. After the war, campus activities included men and women who had experienced the mainland, Italy and France, occupied Japan, or islands in the Pacific.[3]

The large influx of students, including many GIs, placed additional strains on the overcrowded library. Seating space was absorbed by the collections. In May 1949 the Board of Regents referred to the student council a proposal to charge each student \$1 per semester “library fee” to complete a temporary auxiliary structure—a converted Army barracks—equipped with chairs, study desks, and shelving for reserve books.[41]

With no money for new campus building, military structures were moved from Oahu’s bases to serve as temporary classrooms, faculty offices, a library annex, snack bar, band room, and men’s dormitories. “Temporary” proved to be a euphemism. Freshmen of 1947 would find these “barracks” still in place when they returned for reunions many decades later. Today, some of these “temporary” barracks are still in use.



Example of a temporary military barracks: **“Men’s Housing Barracks”**

Up to and through WWII, tailored shirts, ties and coats

were expected of faculty in campus classrooms without air-conditioning. In 1946 during the humid heat of registration, four professors—political scientist Allan Simpson, historian Arthur Marder, anthropologist Leonard Mason, and economist Ralph Hoerber—took a liberating stance by forming a group called the Faculty Wearers of Aloha Shirts. Prior to this time adults rarely wore aloha wear in formal settings. When Honolulu newspapers reported faculty with “colorful shirttails flying,” President Sinclair sent a memo to the group. After the memo was publicized, many faculty who had never worn aloha shirts began to teach in one as an act of defiance. Manoa soon became a campus where aloha shirts were acceptable attire.[3] (On 16 April 1958 Governor Quinn granted Territorial workers permission to wear aloha shirts to work during the summer.)[42]

- As early as 1946 the ASUH conducted national letter-writing campaigns advocating statehood.

- UH Press began in 1947 with one part-time employee. Its first published book was Ralph Kuykendall's *Hawaiian Kingdom*. The Press is one of the nation's top 20 presses. In the same year, UH's Hilo center was established.[43]

In 1947 the University began publishing *Pacific Science*, the first peer-reviewed science journal in the region. In the same year the legislature directed the War Records Department to prepare a history of the territory's role in WWII. Upon completion of its work, it disbanded on 30 June 1949 and gave its documents to the Library.[3] In 1948 the University Library had 189,393 bound volumes, 400,000 unbound volumes, and 2,894 periodicals. The seating capacity of the Library was about 1 seat per 10 students, half of the recommended national standard of 1 chair for every 5 students. In 1949 more than 187,300 items circulated which equaled an average of 42 books per student, 88 per faculty, and 18 for off-campus borrowers.[44, 45]

In 1949 the College of Business Administration was established, the administration building (later Bachman Hall) was completed, and the BOR approved a doctorate in marine science.[3, 41, 45, 46] During this time Assistant Professor Carolyn Crawford and instructor Geiser taught eight Library Science classes (200 and 300 levels) in connection with the Teachers College that included such interesting course titles as Library Observation, Cataloguing and Classification, Book Selection and Reading Guidance, and Promoting Library Use. Library science had been added to the UH list of non-credit courses in 1944.[46]

UH was a quiet campus. The library, cafeteria, and snack bar closed early. Most students lived at home and worked off-campus. The sole parking lot was just off University Avenue where Sinclair Library now stands. This same area originally had been designated for the chemistry building (later Bilger Hall) that was built in 1951 beyond Varney Circle.[3]

Bachman Hall was completed in 1949,[11] and Jean Charlot, an internationally noted artist and writer, was invited to create the fresco murals ("Relation of Man and Nature in Old Hawaii" and "Commencement") that grace Bachman's two-story interior entry. He accepted a position as professor of art at the University, and Hawaii became the permanent home for the Charlot family. After his death in 1979, his valuable collection was bequeathed to Hamilton Library and is held in the Jean Charlot Collection on the fifth floor of Hamilton.[47]

The Changing Campus

Governor Stainback in 1949 vetoed a \$30,000 request for a book storage building for the university library.[41] The Library's first End Of the Year Party was held in the "Old Reserve Room" in 1950 and 17 staff members attended. By the end of 1950 the Library held 210,157 volumes.[48]

- The Korean War started 25 June 1950 when North Korea crossed the 38th Parallel and began to invade the South.[11]

- With the influx of GIs, UH enrollment hit a record of more than 5,000 by 1950.[3] The ratio of men to women was three to two. Tuition was \$50.
- In September 1950 UH had 464 faculty members and 318 civil service workers.
- Travel to San Francisco took 4.5 days by luxury liner or 9.5 hours by plane.[49]

The ceremony planned for the opening of the new \$1.2 million chemistry building (Bilger Hall) brought the ideological battles of the Cold War (and the infamous “McCarthy Period”) to the campus. Biochemist Linus Pauling, California Institute of Technology professor and political liberal, was invited to speak at the dedication of the building in March 1951. When it was learned that a California committee had labeled him “sympathetic to the Red Menace,” the regents, sensitized by anti-Communist investigations underway in Hawaii, cancelled the dedication ceremony.

Soon after the Pauling controversy, the territorial legislature required all public employees to take a loyalty oath. A student employee of the University Press refused to sign the oath and was fired. The loyalty oath, coupled with a drastic budget cut by the 1951 legislature, prompted the generally apolitical faculty to consider membership in a union.[3] (Faculty unionization with UHPA became effective 1 November 1974.)[50] Linus Pauling went on to win the Nobel Prize for Chemistry in 1954 and was awarded a second Nobel award—the Peace Prize—in 1962, for his work to ban all nuclear testing.[11]

- On 16 April 1951 Pacific war hero, General Douglas MacArthur, who had been relieved of his Far Eastern command on April 11, was awarded an honorary doctorate on campus. Some 120,000 turned out to see him on his 24-hour visit.[51]
- August 1952: Library was designated a UN depository of UNESCO.[52] In 1951/52 the Library circulated almost as many books (224,573) as in its collection (228,463).[35]
- The School of Nursing was established in 1953 and its first home was Hale Aloha, the first women’s dorm located makai of today’s College of Business Administration building. Courses in nursing had been offered at Manoa since 1932 to serve students of Queen’s Hospital School of Nursing. In 1966 the nursing program at Queen’s merged with the UH School of Nursing.[3]
- 1953: the Library had 22 librarians; tuition was \$85; lettuce grew in the fields across Dole Street; Dr. Arthur Chiu came to UH, intending to teach civil engineering for just one year but remained for 42 years;[53] the 78-acre quarry area below Dole Street was acquired from the Bishop Estate; Manoa Arboretum (later Lyon Arboretum) was deeded to UH by the Hawaii Sugar Planters’ Association (the Arboretum is probably in the wettest area on the Manoa campus, with an average rainfall of 160 inches per year).
- Between 1953 and 1955 new PhD programs in botany, chemistry, entomology, genetics, and soil science were approved.[3]

A succession of budget cuts in the mid-1950s negatively impacted the campus. Over a 2-year period the average price of scholarly/scientific books increased by 20%, periodicals by 16%, and 15% for bindery costs.[54] A 1955 accreditation team warned in its report that “an accredited university cannot continue to operate on such meager territorial appropriations.” Of the 69 land-grant schools only three—all colleges for Blacks in the

South—received smaller appropriations than the \$417 per student allotted to the University of Hawaii. In 1952 UH ranked third from the last among the 51 land-grant institutions in amount of funds provided for physical maintenance.[3]



(Library staff in University of Hawaii Faculty-Staff Album 1952 photo, top left: 1st in 1st row, Kiyoshi Muramoto, Fumiko N. Takakai, Georgine Yamamura, Mary K. Muraoka, Eleanor S. Ebisuya; last 5 in 2nd

row, left to right, Genevieve B. Correa, Janet E. Bell, Agnes C. Conrad, Joyce Wright, Margaret S. Irwin; 1st in 3rd row, left, Cheuk-Woon Taam)[55]

Librarian Stroven reported in 1953 that the Library had been unable to fill 7 professional librarian positions due to low salary levels that had not kept up with Hawaii's rising cost of living. In 1954, the Library circulated 200,795 items. Cataloging processed a total of 10,846 volumes, prepared 45,000 library cards for the main catalog but still had a backlog of 1,400 uncataloged materials. For the second year in a row, the Library in cooperation with the Plant Physiology Department continued its project of fumigating all items with evidence of book weevil damage. Approximately 600 volumes were fumigated each week. A "shelf reader" clerk was sought to help keep "books in the right order." The reference desk answered 1,937 reference questions. The Hawaiian Collection totaled 11,702 volumes and circulated 5,070 items.[56] The 1953 Legislature appropriated \$1.4 million for a new library at UH.[57]

- In 1955/56 student enrollment exceeded 5,400; the Library contained 265,651 bound volumes—more than a 100,000 volumes short of ALA's recommended minimal standards.[3, 58]
- President Sinclair ended his 13-year tenure in 1955. Dr. Paul S. Bachman, from the Political Science Department, succeeded Sinclair. Bachman died suddenly in January 1957.[3]
- Ernest Morgado changed charity fundraising in Hawaii with the idea of selling Huli-Huli chicken at a farmers' meeting in 1955. He trademarked it in 1958.[59]

UH Manoa's Second Library (Sinclair Library)

The Gregg M. Sinclair Library—the University of Hawaii's second library—opened its doors on 3 January 1956 and at the time was one of the largest open-stack university libraries in the United States. The red-bricked library, designed by Lemmon, Freeth & Haines, Architects, was dedicated to the University's fourth president, Gregg M. Sinclair, who was president from 1942 to 1955.



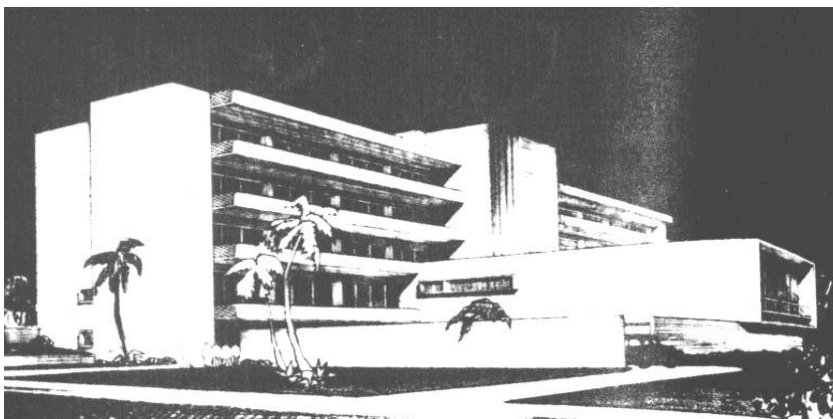
Gregg Manners Sinclair (1881-1967).

The original site for the library had been planned for further makai of its original position but was moved up University Avenue to the old parking lot. This shift in position created delays as engineers made new borings to test the soil structure. Although bids had been opened on 1 February 1954, the building's new location required new bidding, which were made again later in 1954.

Planning for the new library began after World War II in 1951. President Sinclair and the Regents obtained a \$84,140 loan from the Federal Home and Homes Finance Agency to design the new building. The Regents and consultant William H. Jesse, Director of Libraries at the University of Tennessee, studied the building plans. Senior architect Cyril W. Lemmon and the University Librarian Dr. Carl G. Stoven visited mainland libraries to gather ideas for a quality library. The architects, library staff, and the faculty library committee conferred regularly for almost a year, and formulated 4 basic principles for the new library:

1. Adaptable to Hawaii's climate
2. Designed for efficient operations
3. Flexible interior to meet changing needs and
4. Ready access to and convenient use of library materials.

Architects designed the building in the form of a cross, not the conventional rectangular structure, with a wall of jalousies to catch the prevailing breezes and ensure comfortable natural ventilation. Care was made to offer good lighting by providing 50 foot-candles of light at desk level. The \$1.4 million budget approved by the Legislature, however, proved inadequate. Originally planned for 5-stories to house 600,000 volumes and seating for 1000, one floor was eliminated and the lengths of the building and its two wings were reduced. Air-conditioning the large building was considered impractical and too expensive. The walls of the entry are made of Waianae sandstones and provide an interesting contrast with the red brick and glass exteriors.



Lemmon, Freeth & Haines, Architects, initial drawing, showing **Sinclair's** original 5 floors

The ground-breaking ceremony was held on 6 July 1954 and was picketed by American Federation of Labor carpenters. A March

1955 labor dispute caused further delay in its construction. With help from students and faculty in moving the books from the old library over the eleven working days of the Christmas vacation, the new library was ready on 3 January 1956, except for the reserve and current periodicals rooms. Even a heavy *kona* storm did not halt the book-moving operation.

After the first days after opening, only a few empty seats could be found because students were drawn to the attractive library and its superb lighting. After Sinclair was built, the former Library became classrooms and offices and was renamed George Hall after William H. George, former dean of the College of Arts and Sciences (1930-38).

The library was dedicated to Gregg M. Sinclair on 4 May 1956, a year after his retirement as president. He received an honorary Doctor of Humanities degree at the dedication. During his administration the University had gained stature as an important Pacific university. The library collection had also doubled under his leadership. Shortly after the library was completed, some of the exterior bricks, which had been poorly made by Honolulu Mayor Wilson's brick company, began to disintegrate and many had to be replaced.[11, 35]

Sinclair Library utilized the Dewey Decimal system. There was one overall reference point, but no separate reference departments. It was comprised of 5 collections: Government Documents, Hawaiian Collection, Maps and Microfilm, Oriental Collection, and the Teachers College Collection. The main floor contained the reference and reserve rooms, the processing division, the public card catalog, and several administration offices. Library staff numbered 34, and the collection totaled 264,747 volumes.[60] In 1957 student enrollment reached 5,928[3], and more than 3,500 students received Salk vaccine inoculations.[61]

Dr. Sinclair died on 25 July 1967. He was 86 years old and had served 16 years as a faculty member from 1928 and 13 years as president. Sinclair also taught in Japan for many years and devoted much of his time towards the promotion of cultural relations between East and West. In 1968 Japan bestowed on him the Second Order of the Sacred Treasure.[11]



Gregg M. Sinclair Library

In 1958 the regents selected Dr. Laurence Snyder, a geneticist, to succeed Bachman as president. The number of students, courses, degree programs, and size of the annual budgets almost doubled during his five-year tenure, and 37 new buildings were constructed, including Keller Hall (1959), Physical Sciences Building (1960), Webster and Spaulding Halls (1961), dormitories (Frear for women and Johnson for men, 1961),

Edmondson Hall (zoology, 1962), Snyder Hall (biomedical sciences, 1962), Music Building (1962), East-West Center and Kennedy Theatre (1962), and in 1963: Hawaii Institute for Geophysics, College Hill, Student Health Center, and an annex to Wist Hall. A new generation of Democratic legislators, many of them UH alumni, had ended the Republican control of the territorial legislature, and UH benefited greatly from their push for expanded educational opportunities.[3, 11]

Statehood

Following Alaska's admission in January 1959, a new flag with 49 stars was designed and first flew over Independence Hall in Philadelphia on 4 July 1959. It would be the official flag for only a year. Hawai'i was admitted as the 50th state of the United States on 21 August 1959 by proclamation of President Dwight D. Eisenhower. The 50 star flag became the 27th flag on 4 July 1960 and remains the official flag of the nation.

- Fall 1959 Kenya student Barack Hussein Obama, Sr. arrived to study business administration at UH; his son, current Illinois US Congressman and 2008 presidential candidate Barack Obama, was born 4 August 1961 at Queen's Medical Center.[62]

Statehood brought with it seats in Congress, and those votes helped obtain a \$2.25 million grant in lieu of the support given in land endowments to state land-grant colleges.[3] One dramatic result to the University of statehood was the creation of the East-West Center, financed by an initial appropriation of \$10 million. It began with a speech by Lyndon B. Johnson, Senate majority leader, on 6 April 1959, a month after the Hawaii statehood bill had passed Congress with his support. East-West Center buildings were designed by the renowned architectural firm of I. M. Pei.[11] At the groundbreaking ceremony on 9 May 1961, Vice President Lyndon B. Johnson delivered a dedication address and received an honorary degree from the University.[3]

More than half of UH's buildings were constructed during the period from 1960-1982. Between 1959 and 1962, the old McCarthy Road—named after the Territorial Governor Charles McCarthy—was transformed into a pedestrian mall lined with monkeypod trees that helped to soften the harsh lines of structures along the mall. Four buildings—Webster, Spaulding, Edmondson, and Snyder Halls—formed what was designated as the “Memorial Quadrangle” in honor of those who had given their lives in the various wars of the 20th century.[11]

- President Snyder tried to remove UH from intercollegiate football; he ordered it discontinued in 1961 and for the first time since WW II, Manoa had no football team. By the next year the team was playing mainland teams again.[3]

As a Land Grant institution, UH had significant ongoing research in tropical agriculture, natural products chemistry, and botany. Well-known researcher Dr. Paul Scheuer, who began at the chemistry department in 1950 and was an avid library user, created a branch of chemistry for which he became known as "the father of marine natural products." [63]

The services and collections available at Sinclair Library at the time were more that of a college than a full-fledged university. The single reference desk was in the first alcove and reference books were shelved on the 1st floor and the Mezzanine. Periodicals were displayed in alphabetical order. Manual typewriters were used for all reports, orders and correspondence, accompanied by messy carbon paper. There were no photocopy machines available for public use. Faculty and graduate students made their photocopy requests through the Circulation Department. Sinclair was open Monday through Friday with no evening hours, half-day on Saturday, and closed on Sunday. In 1960 the collection exceeded 300,000 bound volumes and librarians answered 15,000 reference questions.

- In 1960 an IBM 650 (UH's first commercial business computer) was installed at the Data Processing and Statistical Center in the air-conditioned basement room of Keller Hall.[64]

Sinclair Library professional staff and their titles for 1961-62:

- Carl G. Stroven – Librarian
- Euphie Shields – Assistant Librarian
- Floyd M. Cammack – Assistant Librarian
- Clarissa H. Halsted – Junior Library Specialist
- Hiroko Ikeda – Assistant Library Specialist
- Raymond G. Nunn – Directory of Oriental Library
- Shiro Saito – Junior Library Specialist
- Donald G. Wilson – Assistant Library Specialist
- Joyce M. Wright – Assistant Library Specialist[65]

In 1962, the Reference Department in Sinclair included the following:

- Joyce Wright, Head (1962-1966)
- Virginia (Margaret) Crozier (1962-1974; one of the first science reference librarians)
- Clarissa Halsted (1948-1968)
- Shiro Saito (1962-1993)
- Ethel Ito (started 1962 as “Clerk typist” half-time in ILL & Reference; in July 1964, she became full time in the Reference Department)



Virginia Crozier (left) and Joyce Wright, June 1974.

Student enrollment passed the 10,000 mark for the first time in 1962,[11] and there was an expansion in number of faculty and in new programs, including new professional programs. A report prepared for the East-West Center in 1961 indicated that there would be a need for increasing numbers of professional librarians in

Hawaii in the years ahead and suggested the University should train new librarians. In the same year the House of Representatives of the First Legislature of the State of Hawaii passed a resolution instructing the University of Hawaii to examine the possibility of

offering a degree in library science.[66] In September 1962, coin-operated copiers first appeared in the library (5 cents a page).

- After a national search, the Board of Regents selected Thomas H. Hamilton, president of the multicampus State University of New York, as UH's 7th president who served from 1963 to 1968.[3]

In the first few years of its operation, the East-West Center functioned as a part of the University even though most of its funding was from the State Department. Several faculty members held split appointments with the center.[67] However, a polarization developed that resulted in a separation of the two institutions. Authors Kamins and Potter wrote: "Competition was symbolized in a midnight raid by center staffers who carried off much of the Asian collection from the University library to the East-West Center. (The books were later returned after Hamilton Library was completed.)"[3]

President Hamilton developed good working relationships with key legislators and Governor Burns, who had ambitions for UH to become a first-rate university. A month after his inauguration, a federal Department of Health, Education and Welfare (HEW) report recommended that the University of Hawaii become a statewide system, composed of community colleges, with the Manoa and Hilo campuses serving as centers for upper-division and graduate studies and research. Between 1963 and 1968 annual expenditures of UH increased from \$28 million to \$63 million. The statewide university system expanded enrollment from about 10,000 to more than 20,000 students.

Hamilton's administration had an easier time with state government than his predecessors. Oversight by the state was relaxed and University officials and faculty established cordial working relations with state officials. President Hamilton was known for his quick wit. During testimony at a legislative meeting, he was asked if UH was operating under PPBS (a DOD fiscal management program called Program-Planning-Budgeting System used during the Vietnam War). "Yes, sir," Hamilton replied, "Richard [Takasaki, Vice President] here handles the PP and I do the BS." [3]

In 1963 the federally-supported and well-funded East-West Center brought in Ralph Shaw, then dean of Rutgers' Library School, to evaluate the lack of coordination and overlap of activities between it and Sinclair Library. Shaw's report (draft copy in the Hawaiian Collection)[68] helped to create a compromise between the two libraries' oriental collections.

To bring coherence to the University's development, President Hamilton organized a group of faculty and administrators to produce the *Academic Development Plan of the University of Hawaii*, [69] which called for a vastly improved library.[67] For the first time, the goals and objectives of the university "were set down in print, program by program, for both the Manoa and Hilo campuses." [3] As part of his efforts to upgrade the University status to a recognized and respected research institution, Hamilton actively sought to expand and improve the library. Dr. Ralph Shaw was selected in April 1964 to serve not only as the Dean of Library Activities for the University of Hawaii Library but also as graduate research librarian, coordinator of library bibliographic activities, and

assistant to President Hamilton.[70] During July and August of 1964, Shaw worked with Stroven, who was second in command, to develop the expanding library program, but returned to Rutgers University until February 1965 to complete some unfinished business. Stroven retired later in 1964.[67, 71]

The Ralph Shaw Years

Shaw had been Rutgers' Dean of the School of Library Services from 1959 to 1964. His PhD in librarianship was from the University of Chicago, and he began his career as chief librarian at the Indiana Public Library (Gary) from 1936 to 1940.



Ralph Shaw (left, late 1950s) is credited with developing the “transaction card charging,” a type of checkout system still used today in many libraries throughout the world. In addition, he invented and patented the “Photoclerk,” a small photostat machine that simplified clerical routines (since superseded by today’s sophisticated copiers).

From 1940 to 1954, Dr. Shaw was Director of the U. S. Department of Agriculture Libraries in Washington, D.C. where he pioneered the development of “miniprint.” In 1942, he planned and produced the first *Bibliography of Agriculture*, using photocopies of original index cards. Also in the 1940s, he designed the “Rapid Selector” (and patented its coding system), which allowed rapid scanning of microfilm to find a desired frame. Shaw credited the Rapid Selector’s basic principles to Dr. Vannevar Bush, who had produced an earlier prototype at MIT. In 1950, Shaw founded Scarecrow Press that specialized in low-overhead publications. He also served as President of the American Library Association.

Dr. Eugene Garfield, founder of Institute for Scientific Information, described Shaw as “an eminent educator...extremely controversial and frequently dogmatic, to both the delight and chagrin of his colleagues and students.”[72] UH had hired Ralph Shaw with the charge of bringing the UH Library up to the standards of a first-class American university, capable of supporting advanced degrees and research in agriculture, ocean/marine science, and a new medical school. Additional emphasis was to be placed on Asian and Pacific collections to support students and faculty of the East West Center. A law school was also on the horizon.

As early as February 1962, President Laurence Snyder had announced plans to build a science library using federal funds.[73] Capitalizing on the momentum generated by President Kennedy’s challenge to the nation to put a man on the moon by the end of the decade by expanding America’s science and technology programs, Shaw obtained a NSF grant to build a research library for UH, which was to be completed in 1968. (An earlier \$3 million NSF grant had enabled the construction of the Hawaii Institute of Geophysics building in 1963.)[3] The new Graduate Library, as it was called before being renamed Hamilton Library,[39] was designed to hold 677,000 volumes, compared with Sinclair’s 500,000 capacity. The groundbreaking for the \$3.4 million Hamilton Library occurred on 4 March 1965.[74]

- In 1964 the East-West Center had in “the drawing board stage” a plan for a building to house its research collections and Institute for Advanced Project. The proposed building was to be connected to the new Graduate Library. It was not funded.[75]

With the growth of higher education in Hawaii, an increased need for school librarians, and the establishment of the East-West Center—which had begun training professional personnel to work in Asia, Shaw saw the need for increasing the numbers of professional librarians in Hawaii and founded the Graduate School of Library Studies (GSLs) in 1965. Shaw not only developed its curriculum, he also recruited several faculty from the mainland such as Margaret Ayrault and George Bonn.[66] The *Graduate School Bulletin*, 1965-66, lists “Library Studies” for the first time.[76] (GSLs later became the School of Library and Information Studies in 1987. Since 1997 when it merged with the Department of Information and Computer Science, it is known as the Library and Information Science program.)[77]

George Bonn (below, 1985), who had his Master’s degree in chemical engineering, brought to the Library much needed and wider experience and knowledge of the literature of science and reference services. He taught Advanced Reference Sources, Science and Technology Literature, and Government Documents, was Assistant Dean of the Library, and also served as Head of the newly created Science and Technology department.[78] In



2003, George S. Bonn passed away. His estate established a Science and Technology Endowment fund in 2005 for the Science & Technology Reference Department.[79, 80]

Margaret Ayrault served as senior cataloging instructor in the newly created School and as consultant/coordinator in the re-classification project. She was awarded ALA’s Margaret Mann Award in 1975.[78, 81] Margaret Taylor was the School’s first full-time faculty member. Influenced by the practices of Rutgers and other graduate library schools, Shaw scheduled classes to meet once a week rather than the standard three 50-minutes sessions.

The School’s new classes began 22 June 1965 and were taught by George Bonn, Roger Greer, Ralph Simon, and Helen Stevens. Later that fall, Margaret Ayrault, Edward Schofield and Mary Andrews Shaw joined the School faculty.[66] The first class of eight students graduated with MLS degrees the following year.[67] The American Library Association accredited GSLs in June 1967, the shortest period between the start of a graduate school and its approval by ALA, and a record not matched since.[66]

Basil Idler, retired Science and Technology Reference librarian and Head, summarized some of Dr. Shaw’s key contributions at UH:

- Established a graduate school in library science (June 1965)

- Re-classified the entire collection from the Dewey cataloging system to the Library of Congress (LC) system (1965—1967) [This was an incredibly arduous task, which a lot of libraries worked at, but few ever finished. Even UH President Hamilton realized the gravity of the situation. In 1963 he reported: “I used to lie awake nights, thinking about how every time a new book came in and was put in the Dewey decimal system, it was adding to the reclassification problem ahead.”][82]
- Enlarged the collection several fold [Between 1964 until 1968, the rate of acquisition increased from 20,260 volumes per year to 95,843.]
- Convinced the powers-that-be that a new, bigger, air conditioned library was necessary [Hamilton Phase One was completed in the summer of 1968.]
- Created separate staff and service units including: Science & Technology Reference, Humanities and Social Sciences Reference, Hawaiian Collection, Asia and Pacific Collection, Serials, Acquisitions, Cataloging, Government Documents and Maps.

In October 1966, Dr. Robert Stevens, then Director of Research Collections at East-West Center, joined Shaw as Associate Dean of Library Activities. Stevens had primary responsibility for designing the space in the new building to be occupied by the Library School. By 1963 only nine librarians had faculty status. Stroven had wanted the remaining 23 also placed on the library specialist list. Working with Personnel Services, Shaw reclassified the library’s professional staff to faculty status and clerk typists to library assistants and technician positions by February 1966. Only someone who has had experience in working with the complexities of Federal and State personnel agencies can fully appreciate the enormous amount of skill and patience required to have extricated the University’s professional librarians from civil service and established the new series of library assistants/technicians in the civil service system in Hawaii.[67]

- Dr. Greorg von Bekesky was the first Nobel Prize winner to join the UH faculty in 1966. He won the 1961 Nobel Prize in Medicine and Physiology and later donated many of his personal art books to the Library.[83]
- Philippines President Ferdinand E. Marcos received an honorary doctor of laws degree from UH on 26 September 1966.[84]
- Hawaii experienced the first live TV broadcast to and from the mainland by KHVH on 19 November 1966.[85]

Between 1965 and 1966, Joyce Wright resigned as Head of Public Services to accept a position at East-West Center Library. Reference librarians at this time included:

- Harold Sharp, Head (1965-1968)
- Genevieve Correa (transferred from Selection & Search; she was formerly Head of Serials Department)
- Virginia (Margaret) Crozier
- Frank Fahnstock (1965-1967)
- Emily Garnett (1963-1968)
- Clarissa Halsted
- Shiro Saito
- Margaret H. Smith (1962-1972, Education librarian)
- Goldie Zacks (1965-1970)

Science & Technology Reference Department, Created June 1965

Federal funds contributed 14% of the total income at UH in 1957[61]; eight years later it had jumped to more than 35%[86]. Most of the federal research money went to the areas of science and technology. The world's two superpowers were locked in an accelerating Cold War and Space Race. Amid this historic milieu Ralph Shaw formed the Science & Technology Reference Department (SciTech) in June 1965. It was located in the Sinclair basement along with Asian materials transferred from the East West Center. The working environment of the basement was unpleasant. There was no ventilation and much of the year it was hot and sticky, especially in Kona weather when it was not unlike working in a sauna. At this time, Sinclair Library consisted of 3 departments: Public Services, Acquisition/Cataloging, and Circulation. New hires were assigned to one of these departments.

Science & Technology staff in 1965:

- Virginia Crozier, Head (1965-1968; George Bonn was Head for a time between 1966 and 1967)
- Naseem Ahmad (1965-1967)
- Ethel Ito (1965-2000)

Janet Moelzer (below, 1988) recalled that being a student worker in the library was a great way to avoid summer work at the pineapple canneries. She started in SciTech the fall of 1966 and worked for Ethel Ito, along with Virginia Crozier and Naseem Ahmad, an East Indian librarian. The Sinclair basement was dark, dusty and musty. It was so packed with books that finding and shelving them became a creative process. All shelves were completely filled, with additional books lying on their sides atop the upright books. More books were stacked in piles on top of the range covers, with yet more books in tall piles on the floor. A book truck could not be pushed down the aisles. Adding to the congestion were the newspapers, which were very messy to shelve. There was also a section of Dewey-classed books—the last remnants of LC re-cataloging.



- In 1965-66 enrollment exceeded 17,000,[87] and full time faculty totaled 1,187.[86]
- Euphie Shields retired after 41 years as a UH librarian and Assistant Librarian since 1941. When she began at the College in 1924, there were 35,256 volumes.[88]
- For lack of large lecture halls on campus, the University began renting the 800-seat Varsity Theatre in 1966. For almost 10 years undergraduates trekked off campus to the movie theatre for large lecture sections of classes. By 1966 the University had become a statewide system with community colleges.[89]
- In 1967 with funding from the US Public Health Services and help from mainland foundations, and the state Legislature, a 2-year medical school opened with Windsor C. Cutting, former dean of Stanford's medical school, as Chair.[3]
- By 1967 the University had moved from near obscurity to 42nd place among the more than two thousand institutions of higher learning in America based on the value of federal

grants received. UH had matured from a small urban college to a major research university in the space of 60 years.[3]

- 1967 was also the year of worldwide student rebellion over the Vietnam War. Local student protests were low-keyed.

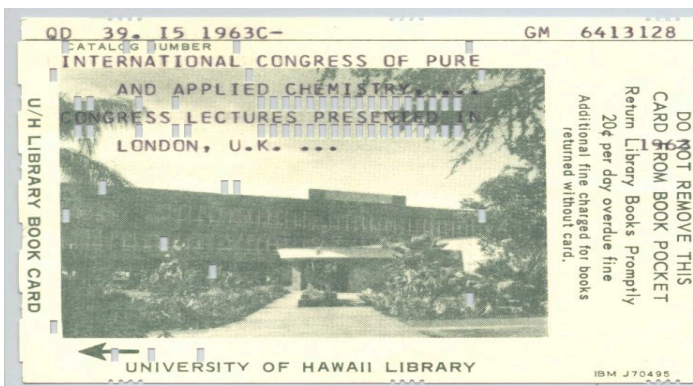
In the fall of 1967, Shaw hired 3 librarians to work in SciTech: Peggy Apple, Eugenia Bakris, and Paula Szilard. The three of them descended on the department the first of October, much to the surprise of Virginia Crozier and her staff of two: Rita Kane, reference librarian, and Ethel Ito, clerical assistant. It was typical of Shaw not to tell his department heads that he had hired staff for them, let alone consult them on such matters. The SciTech desk used an Auto Writer to check the periodical status with the Serials Department.

SciTech in late 1967, SciTech:

- Virginia Crozier, Head
- Peggy Apple (1967-1968)
- Eugenia Bakris (1967-1970)
- Ethel Ito
- Rita Kane (1967-1973)
- Paula Szilard (1967-1995)



Shaw had assigned most of the staff to work on some facet of reclassifying the collection. In 1963 Shaw had estimated that it would cost less than \$250,000 to convert the 200,000 titles of the library to LC classification.[68] **Paula Szilard** (left, 1995) recalls filing new catalog cards for re-classed items into the library's main catalog, sometimes as long as 8 hours a day. Another librarian involved with card filing before joining the Science & Technology department in January 1968 was Basil Idler, who had had extensive experience with maps in the military and later took charge of the Map Collection. Librarian Ron Chapman also assisted with card filing.



Shortly after his arrival, Ralph Shaw—the man who had made a reputation as an efficiency expert—discarded the newly installed (1965) IBM circulation record system (**IBM Library book card**, left) and designed his own manually operated one, which five years later was still so economical that computer salesmen could not use cost

savings as an argument for installing an automated record system. (Ironically, the discarded IBM automated circulation system had been named SCHAW—Sinclair Circulation Handling Way.)[67]

Shaw made an impact on other library operations as well. The Kardex file for checking in periodicals was discarded and replaced by 3x5 cards and cardboard boxes. He also introduced the use of Library of Congress proof slips for the simultaneous selection and ordering of books and preparation of catalog copy.[90]

Another of Shaw's priorities was to build a collection so the library could meet accreditation standards. He used damning statistics to increase funding, such as his 1964 report: "...the median annual book budget of 43 state universities was...60 percent more than the University of Hawaii spent." [67] Money became no object. He did away with the Gifts and Exchanges unit and directed that the library would subscribe to whatever periodicals it needed. Though now almost impossible for librarians to conceive of, he set up a system whereby the library automatically purchased most English language books published in the United States and the United Kingdom. His 1965 Carnegie grant enabled him to establish a reprography unit at the library.

At this time library reference staff was not involved in the selection of materials. Books were selected in the Acquisitions Department from Library of Congress proof slips for everything cataloged there. SciTech librarians and public service librarians in other units were allowed later to participate in this process. Science librarians made the case that science and technology materials were very specialized and librarians with subject expertise, as well as input from the university faculty, should be actively involved in the selection process.

Long runs of bound journals covering previous years were purchased. The number of periodicals received in 1965 was less than 3,000; in 1968, it was 11,000.[91] Indexes and abstracts covering all major fields, such as chemistry, biology, zoology, engineering and agriculture, were acquired or extended. *Science Citation Index* was added. Shaw utilized his many contacts in Washington, D. C. and other sources available to him as former Head Librarian of the Department of Agriculture, to acquire depository status for the Army Map Service and the National Hydrographic Service. According to Kamins and Potter, during Shaw's tenure, "annual acquisitions rose fivefold, nearing one hundred thousand volumes." [3]

- Politics—world and local—served to end the era of President Hamilton by Spring 1968, culminating in the Oliver Lee case. Lee was an untenured assistant professor in political science and had protested America's involvement in Vietnam. Local conservative groups were angered by his protesting and criticized the University for allowing his "seditious" actions. Hamilton defended Lee's freedom of speech. Lee was initially granted tenure, but after negative publicity, his dean revoked the tenure with Hamilton's approval.[11] The public debate intensified. On June 1967, the Board of Regents rejected Lee's appeal. The hearing committee of the Faculty Senate reported its finding 3 days before Christmas: "the administration and regents did not have reasonable cause to discharge Lee and failed to follow due process." Hamilton announced his resignation. (Lee would gain tenure, quietly, in 1970.)
- The Oliver Lee case was a turning point for the University in many ways. It lost a charismatic president. The feeling of abiding confidence and institutional well-being among faculty, staff and administrators was damaged. Trust among state government, UH

administration and the general public was weakened. Support and funding for the further growth of the University became more problematic. The Board of Regents began reviewing individual faculty tenure and promotion dossiers.[3]

UH Manoa's Third Library (Hamilton Library, Phase I)

The move from Sinclair to Hamilton started in the early spring of 1968, well before the re-cataloging project was completed. Hawaiian Packing and Crating handled the bulk of 400,000 volumes to be moved. Everything in Sinclair was fumigated before being moved.[92] Janet Moelzer recalled pushing book trucks across campus between the two libraries. Shelving space seemed immense in Hamilton Phase I, but at the acquisition rate set by Shaw, in a few years that space filled rapidly. The number of volumes held by the Library in 1968 was approximately 650,000—"smaller than the collections of any of the 11 state universities to which it was compared." During 1967-68 the Library spent about \$640,000 for books and journals but still "had a backlog of about \$300,000 requested by departments but not purchased because of lack of funds." [91] By 1969 library staff included 60 professionals[93] and about 70 civil service employees.

Basil Idler (below, 1981) and Paula Szilard were to file catalog cards until mid-summer 1968. When the library moved into the new Graduate Research Library (its original name)[39] on the Mall in June 1968, Sinclair became the undergraduate library. Science & Technology was on the second floor of the new library, along with humanities and social sciences materials. The SciTech reference desk moved several times, but it was always somewhere near the top of the stairs (Phase I).



One Dennison photocopy machine was located on the 2nd floor for the public (coin-operated) and for faculty and graduate students (SciTech maintained a by-pass key and sign up tablet for faculty/grad students). Several faculty recommended the library obtain an auditron copier. Shaw had set a policy in 1965 of offering inexpensive coping services (5 cents/page) instead of lending periodicals.[67] Science periodicals for the first time were arranged by LC call numbers.

SciTech in 1968:

- Virginia Crozier, Head (She resigned in 1968 to accept a position as Head of Public Services in Hamilton Administration and retired in 1974)
- Eugenia Bakris
- Basil Idler (1968-1990)
- Ethel Ito
- Regina Liu (1968-1971; see photo below)
- Rita Kane, Head (She became Head after Crozier resigned)
- Paula Szilard

Shaw retired in July 1968 due to ill health, and Stanley L. West, a GSLS faculty member and former Director of Libraries at the University of Florida, became University Librarian. When West retired in June 1977, Donald Bosseau—an atomic engineer, GSLS graduate, and Emory University alumnus—succeeded him. Both had to deal with years of fiscal austerity, civil unrest, and revised library priorities. By December 1968 the Board of Regents had approved naming the main library Thomas Hale Hamilton Library.[94]

The Map Collection remained at Sinclair for awhile after the move to the new library. With no pre-planned space for the maps, they ended up in SciTech where the removal of a half dozen carrels made space along the northwest wall for map cases stacked three high. Basil Idler was placed in charge of the Map Collection. The 2nd floor also housed humanities and social science books, Closed Shelves, and curriculum guides.



Regina Liu, 1975.

1969 was an important year for the library. It received membership in the Center for Research Libraries. Gifts and Exchanges was re-established within Technical Services.[67] Charles Adams became head of the undergraduate Sinclair Library, and world-famous bibliographer Renee Heyum became the Pacific Collection's first full-time curator.[95]

- Harlan Cleveland, US Ambassador to NATO, became the 8th president of UH in September 1969. His \$40,000 salary exceeded that of Governor John A. Burns by \$6,500.[96] Cleveland served for 5 years.
- Interestingly, four UH presidents—Gilmore, Crawford, Sinclair, and Cleveland—did not hold earned doctorates.[37]

Financial Setbacks

The first of several major financial crises in the state and university occurred in the early 1970s. The whole library was involved in a large periodical cancellation project. Science journals were becoming more expensive and the library materials budget was cut dramatically. The library's budget of \$2.6 million for 1972-73 was slashed to \$1.8 million for 1973-74.[97] The SciTech staff reviewed all subscriptions with the help of its faculty. Faculty ranked each journal as to its importance, marking their priority on the journal covers. During this time virtually no monographs were ordered. Librarians accumulated boxes of unfunded faculty requests.

- At the dedication ceremonies of Thomas Hale Hamilton Library on 16 March 1970, former president Hamilton remarked: "The two things that are absolutely necessary for a university are students and a library. And if the library were good enough and the students curious and diligent enough, they could educate themselves."[98]

Janet Moelzer noted that after graduating with her Bachelor's degree in 1970 and having been inspired by the excellent role models around her, she decided to enter Library School. While continuing to work as a student, she helped with the data collection when Hamilton Library began its project to cut journal subscriptions.

SciTech in the early 1970s:

- Rita Kane, Head
- Basil Idler
- Ethel Ito
- Paula Szilard
- Barbara Tillett (1970-1973)

Barbara Tillett joined the SciTech staff in 1970. She became very interested in providing specialized reference services in one of SciTech's major areas of excellence—Ocean Science and Technology. With a 1971 grant she set up the Ocean Science Information Center (OSIC). Many technical reports and other ephemeral materials, as well as some journal articles, were indexed. Extensive computer printouts served as paper indexes for these materials. Unfortunately, this service was discontinued when Tillett left in 1973. During the ongoing state financial crisis, newly hired staff were sent “pink slips,” (termination notices), and she received one. Although librarian jobs were scarce at this time, Tillett was hired at one of the premier oceanographic institutes: Scripps at La Jolla.



In June 2004, **Barbara Tillett** (with lei; **Peter Jasco**, UH LIS, 2nd on left) received the Margaret Mann Citation—ALA's highest honor for achievement in cataloging and classification. Tillett has been Chief of the Library of Congress' Cataloging Policy and Support Office in the Cataloging Directorate since 1994. She earned her library degree at the

University of Hawaii in 1970 and her doctorate in 1987 at UC-LA.

<http://www.ala.org/ala/alcts/alctspubs/alctsnewsletter/v15n4/awards.htm#Mann>

(Margaret Ayrault had won the Margaret Mann Citation in 1975.)[81]

SciTech and the Library benefited from the close working relationships between campus faculty and SciTech faculty—three of whom were married to instructional faculty. Not only did these three science librarians know the members of their husbands' departments but they were also aware of their various information needs. Knowing the faculty socially helped to gain their cooperation, support and even resources for the Library. Rita Kane's husband was a researcher and faculty member of the Pacific Biomedical Research Center

(PBRC). Regina Liu was married to Robert Liu, a professor in the chemistry department (now Professor Emeritus). Paula Szilard's husband was a faculty member of the College of Engineering.

New buildings continued to go up: St. John (1970), Business Administration and Biomedical Science buildings (1971), Holmes Hall (1972), the Campus Center (1973), Porteus (1974), Art Building and Astronomy Institute (1975), Sakamaki and Gilmore Halls (1977), Korean Studies (1979), Marine Science Building and Law School Library (1982).[11] Enrollment at Manoa in the fall of 1972 was at an all time high—22,371 students,[3, 18] higher than today (20,644, Spring 2006). Tuition was \$85 per semester.

An alphabetical List of Serials was printed and became a highly used printout for many years. Circulation and Fiscal maintained the coin-operated photocopiers. In the mid-70s SciTech began hiring Library School students to work in its department. PAULMS (Pacific Area Union List of Medical Serials) was first published in 1973 and included the holdings information for the major medical libraries in Hawaii (including Hamilton) plus American Samoa, Guam, and Trust Territory of the Pacific Islands.[99]

When Paula Szilard returned from her year's leave in the fall of 1973, Barbara Tillett had already left for her new position at Scripps, and **Rita Kane** (left, 2004) was still the head of SciTech. She skillfully built up the reputation of the young department among campus faculty and Library Administration and had a considerable network of professional contacts. The 3 librarians in SciTech were Kane, Idler and Szilard. The following year when Kane was hired as head of the Biology Library at the University of California at Berkeley (later head of public services there), Idler became head of SciTech and Szilard assumed collection development responsibilities. With only 2 librarians in the department, Library Administration tried to eliminate the SciTech reference desk and centralize reference services. The science faculty objected, and the plan fell by the wayside, but was resurrected periodically.



SciTech in 1973-1979:

- Basil Idler, Head
- Viola (Vi) Furumoto (1974-1988—transferred to SciTech in 1974 from Hastings H. Walker Library of Leahi Hospital. UH had assumed control over Leahi. She was Acting Head: 1975, 1978, 1980)
- Doris Hayashikawa (1979-1990—hired after the state's financial pressure eased; she added to the department's expertise with her BA in chemistry. She later became Head of SciTech for several years.)
- Ethel Ito
- Janet Moelzer (1973-1979—worked first as a volunteer and later as casual hire)
- Harriet Pong (1974-1979)

- **Betty Rognstad** (1972-1984—changed her name to Adriyana Rowan in 1981; she worked part-time and did most of the MEDLINE searching using a T1 terminal with a phone handset.)
- Paula Szilard (continued with much of the collection development work)

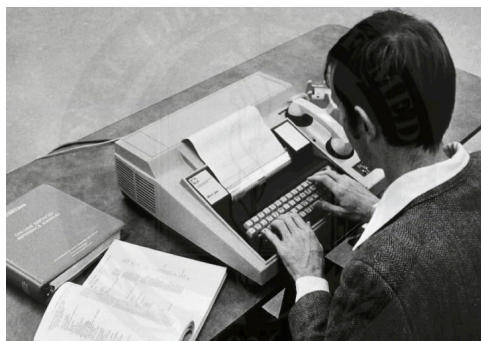


Online Searching

On 1 June 1973 a consortium agreement was signed for MEDLINE (medical online database) service in Hawaii, the Trust Territory, and the Pacific Command. Access was shared by Tripler Army Medical Center, Hawaii Medical Library, and University of Hawaii Library. In mid-July MEDLINE service was first inaugurated and by 31 October 1973, 260 searches were completed by the 3 participating libraries. Hamilton Library was fortunate to be included in this first MEDLINE service; the system had space for only 200 centers in the US.[99, 100] **Betty Rognstad** (left, 1978) was the first to start MEDLINE searching in the Library. The medical school became a complete 4-year medical school in 1973 despite strong opposition from within the local medical community and some Manoa faculty members. In the same year the school of law opened in quarry wooden structures with 50 students.[3]

Computer searching of databases by librarians started with MEDLINE, which was available only until 5 pm (EST). Results were generally mailed. There was some controversy about promoting MEDLINE searching because it was felt that the federal government should not subsidize this service for physicians. Most SciTech librarians received MEDLINE training (1 week) at various times from the Hawaii Medical Library and shared the searching workload. Paula Szilard also did a considerable amount of MEDLINE searches.

The machine used in online searching required manually dialing the correct National Library of Medicine (NLM) phone number. As it was connecting, the phone handset was placed in a doughnut-shaped, foam rubber receiver-device **coupler** (NLM image, left) and an automatic analog connection was made.



Searching of databases for subjects other than medicine began after Basil Idler was sent to UC Davis' five-day training course on Agricola. Idler searched the array of databases offered by Lockheed Martin, which had long runs of nearly every printed index. Boolean searching was available. Formal training for online searching was very scattered. A trainer with a PhD in chemistry did provide a week-long course on Chemical Abstracts for faculty and graduate students. Otherwise, online searching of other databases was an on-the-job learning experience.

Initially, Basil Idler did the online searches of the science indexes as well as those for social sciences and humanities. Those included the *Guide to Periodical Literature* and databases in education and business. Patent searching was added and attracted a number of would-be inventors among the community who heard of the service by word-of-mouth. A year or two later, librarians from humanities and social sciences began searching their own online databases.

Faculty and students contracted for searches by filling out a form that specified bibliographic details, coverage dates, desired format, cost limitations, and other parameters. Usually an in-person interview or a follow-up phone call was done to insure a common understanding of what the requestor wanted and an estimate was given of the cost. Searches were done on a cost-recovery basis and were provided mostly to UH researcher with funding from their research grants.

Phase II Addition to Hamilton Library

When planning began (mid-1970s) for the first addition (Phase II) to Hamilton Library, Idler interested the Library in including a separate space for the Map Collection, which was growing rapidly from depository receipts. Joyce Watson, the Phase II building and planning coordinator, accepted Idler's request to place the Map Collection in the new building. Professor Wingert of the Geography Department was consulted about space and equipment needs for the new Map Collection. After completion of Phase II, responsibility for the Map Collection passed to Ashby Fristoe.[40]

Basil Idler was the primary planner for the new SciTech facility in Phase II of Hamilton. Dr. Stanley West, the University Librarian after Ralph Shaw resigned, decided that the position of department chairs (heads) should not be permanent but should rotate among the librarians in the departments.

Another request made to Joyce Watson was for an enlarged space for SciTech staff and its reference desk. In Hamilton Phase I, the SciTech desk consisted of a standard office desk to which was pushed daily a book truck loaded with heavily used ready-reference materials that were kept at the reference desk. At the close of day, the truck was pushed back to the "SciTech office." This *office* consisted of two rooms: a small room for the Head, and a larger workroom for the reference librarians and the library technician. Five people were crammed into this small space. When Phase II was built, SciTech expanded to a larger area on the third floor for the reference desk, a bigger workroom, and separate offices for five librarians.

- Unionization of faculty was a contentious and on-going debate since 1968. After the budget cuts of 1973, the University had notified 160 tenured faculty that their contracts would expire in a year. The American Association of University Professors and the National Education Association created a new unit called the University of Hawaii Professional Assembly (UHPA), which became the bargaining agent for the faculty 24 October 1974.[101]

In April 1975 construction began on the second phase of Hamilton Library. The total cost of the six-story addition was \$12.5 million and included renovations to the older 4-story Phase I. The library doubled in size with 280,448 square feet, a capacity for 1.7 million volumes, and space for 1,700 patrons. The new building opened in December 1976.[11] Formal opening ceremonies were not held until 4 October 1978.

SciTech moved to the 3rd floor of Hamilton Phase II. To celebrate their new quarters and to welcome faculty and students, SciTech held an Open House in May 1977—complete with lots of good food, including a chocolate and fruit fondue (a big hit!). The department had considerable more space initially, but eventually runs of bound science journals consumed more and more space. In the early 1990s some of the older science volumes had to be stored in Sinclair Library where, lacking climate control, they continue to be exposed to the elements, insect pests, and mold.

With the opening of Phase II of Hamilton, the outside roof area (lanai) was frequented by students and staff. It was a relaxing place to warm up in the sun and eat lunch. A small area facing Edmondson was a designated staff area with picnic tables. Due to problems of leaky roofs and patrons tossing books off the roof in lieu of checking them out, access to the roof was permanently closed. A third phase, slated to be completed in 1985, was delayed thirteen years due to lack of funds and low priority by the state and UH.

For two periods between 1973 and 1979, Janet Moelzer worked half-time for a full year, filling in for librarians Paula Szilard and Viola (Vi) Furumoto, who went on sabbaticals. Moelzer handled the preliminary processing of interlibrary loan requests, such as verifying citations and checking holdings in other libraries. She also wrote the SciTech Interlibrary Loan manual and later supervised the ILL work of SciTech's first library school intern, John Hoover. (John Hoover was systems librarian at Hawaii Medical Library for many years and has written a variety of photography books about Hawaii's colorful fishes and underwater life.)

- In January 1976 a UH physics team, working with other international physicists, announced the discovery of a new matter particle called "charm" which lasts only one ten-thousandth of a billionth of a second.[102]

Searching for Hamilton's books still required using the card catalog cabinets, but it was time-consuming for users and librarians having to go downstairs to check the main floor catalog. SciTech librarians often would use LC classification schedules to look up the subject area that a patron wanted and take them to the appropriate area in the stacks. Later, a microfiche reader was utilized to locate items from the microfiche catalog. A separate office behind the reference desk was used for database searching on Dialog.

Like other libraries nationwide, the university library started to automate its operations in 1977 by making the decision to join the shared online cataloging services offered by OCLC (Ohio College Library Center). In June 1979 the library began its cataloging on OCLC. The ceremony for the inauguration of automation at the UH library was a unique blend of local traditions with technology. Leis were placed on the four computers

received from OCLC, and kahuna Charles Kenn offered a chant “in Hawaiian for the success of the ‘Mikini’ (machines).”[67]



Inauguration of automation at the UH Library.

Front, left to right: Linda Engelbert, Jun Nakamura, Jan Shimabukuro, Lan Char, Misao Shibayama, Fritzie Newmeyer at computer, head of Cataloging; in back; Dennis Ladd, Sally Drake, Virginia Richardson, Velma Fong; Aiko Crandall (far right with glasses).[103]

At the end of summer 1979, Moelzer left SciTech and moved to Oregon. Upon her return in 1986 and while visiting everyone in SciTech, Doris

Hayashikawa talked her into taking a temporary position in SciTech. She continued with temporary work and volunteered awhile but eventually moved to Humanities and Social Sciences for paid full-time work. Theft of library materials was a big problem (10% of the collection was estimated to be missing)[104] until the late ‘70s when an electronic book detection device (KNOGO) was installed.[67]

- UH library ranked 52nd in 1978 among the 98 American and Canadian ARL libraries in number of volumes; the collection had 1.7 million volumes as compared with first-ranked Harvard’s 9.9 million volumes.[105]
- The Library Systems office was created in 1979[106] and Carol Tenopir was head from 1979 to 1981. She received her PhD in Communication and Information Sciences from the University of Illinois at Urbana-Champaign, was on the faculty of Manoa’s School of Library and Information Studies from 1983 to 1994, and currently is Professor of Information Sciences, Interim Director of Research for the College of Communication and Information, and Center for Information Studies at the University of Tennessee, Knoxville.[107]
- In December 1979, the crumbling F-Tower of the Business Administration complex was closed. Manoa Chancellor Yamamura said of the 8-year-old building that it “was one of the worst buildings we have....It’s very badly designed.”[108, 109] It was demolished in 1980.
- Turnstiles at Hamilton Library on 13 December 1979 indicated that a record 9,000 users had used the library in one day; it was estimated that about 20% of the library traffic were non-Manoa students.[110]

SciTech in 1979—

- Vi Furumoto, Head
- Barbara Bird (1979-1984; did considerable online searching)
- Doris Hayashikawa
- Nina Horio (1980-1994)
- Basil Idler
- Ethel Ito
- Paula Szilard

Vi Furumoto succeeded Mr. Idler as Head. She remained in her own office and did not displace Mr. Idler even though he offered to switch from his larger office. Paula Szilard

succeeded Furumoto as Head and later took a sabbatical to finish her natural food cooking book.

SciTech librarians pushed hard for Dialog training for searching on a cost recovery basis and arranged for training sessions for other librarians. Ethel Ito was meticulous about reminding people to pick up their online searches and pay for them. Telnet was the access mode and command line input was required, a far cry from today's Web access. Barbara Bird provided a big impetus for Dialog searching. She worked directly with the College of Tropical Agriculture and did much of their searches.



Ethel Ito (left, May 2000) was Science and Technology's first and longest-serving librarian technician. She helped to keep the SciTech department functioning exceptionally well up to the time of her retirement in May 2000.

Another financial crisis hit the state in the early 1980s. Once again SciTech was canceling journals after faculty review. The Library started to recover in the mid-1980s and was able to begin purchasing some essential journals for a few years. An auditron copier—the first for faculty and grad students—was added on the 3rd floor, and SciTech was in charge of its maintenance.

- In July 1981 a giant crackseed 15- by 75-foot mural was completed by 14 art students on the ewa wall of the Physical Science Building; they used 15 gallons of exterior latex paint.[111]
- *Adam* returned to the Manoa campus in May 1982 after being “missing” for more than 25 years. *Adam*, a 7-foot high brass sculpture by internationally famous artist Satoru Abe, was commissioned by the Class of '54 for the old University Bookstore courtyard. It was subjected to many student pranks, including one that placed it in a tree. A retired UH professor admitted to taking the sculpture to protect it. Later, Abe welded the statue on a heavy square block to ensure its security and selected *Adam*'s new home as the landing of the stairway leading to the second floor of Sinclair Library.[112]
- UH faculty staged their first 2-day strike, 21-22 November 1983. UHPA noted it was the first “legal” public employee strike in Hawaii.[113]
- UH Library dropped in ranking from 48 (in 1979-80) to 60 (1982-83) among ARL members.[114]

SciTech from 1981 to 1986:

- Paula Szilard (Head, 1981-1983)
- Barbara Bird
- Vi Furumoto
- Doris Hayashikawa (Head, 1983-1986)
- Nina Horio
- Basil Idler
- Ethel Ito
- Carolyn Payne (1980-1985)



Doris Hayashikawa succeeded Szilard and remained Head for several years. Hayashikawa resigned in 1989 to take a position in Technical Services. Nina Horio succeeded her as head of the department. **(Barbara Bird, Vi Furumoto, Doris Hayashikawa, Carolyn Payne, left to right, 1982)** When John Haak arrived at the library (1983)[3, 39], a book took about one year to arrive on the shelves after it was ordered. Utilizing air-freight, bulk cargo shipping and

automated cataloging helped to reduce the elapsed time to months.[114]

The engineering collection was developed primarily by Paula Szilard, whose husband was on the faculty College of Engineering. Vi Furumoto, whose husband was a veterinarian, largely developed the medical/nursing collection. Furumoto worked with Dr. Lebra to get free subscriptions to several Asian medical journals. Basil Idler's collection activities included agriculture (his second masters) and military science.



Szilard was the chief bibliographer for SciTech, was a member of the Serials Review Committee, and represented SciTech in other library groups. She also collected for nutrition. Doris Hayashikawa, who had a BA in chemistry from UH, collected for

chemistry, physics, computer science, and geological sciences. (**SciTech** 3rd floor Phase II reference desk and reference collection above; walls and carpet were a distinctive orange color [note absence of computers], early 1980s.)

Computers For Library Patrons

Although computers were introduced in the library by the late 1970s, they were used for automation purposes in staff offices, not in public areas. In 1984 under the direction of Library Director **John Haak** (below, 2000), the library selected its first integrated library online system called ALOHA. Some considered the move a giant leap of faith because



the company was local and the library was its first customer.[39] However, the home-grown system provided circulation and cataloging modules and, for the first time, online public access to the library catalog. The distinctive green screens of the Wyse50 dumb terminals[106] (Gandalf referred to the terminals' network, not the wizard from Tolkien's "The Lord of the Rings") remained in use until the mid-1990s when they were replaced by PCs.

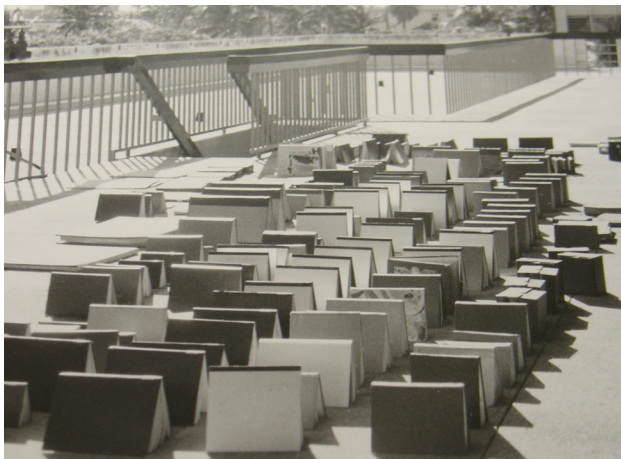
(SciTech, 3rd floor reference desk area, right, Fall 1994) After GEAC purchased ALOHA in 1989, the library switched to the Colorado Alliance of Research Libraries (CARL) in 1990. UHCARL offered online access to the library catalogs of UH Manoa, the nine community colleges of the UH System, Hawaii Medical Library and Bishop Museum. In 2000 the library migrated to VOYAGER, its third and present library management system that utilizes a Web-based catalog.[39]



- In 1985 UH ranked 25th in the nation in earth, ocean and physical sciences (including astronomy) based on total research funding, according to NSF figures.[115]

Phase II of Hamilton quickly became inadequate to house SciTech's growing collection. A side room in Phase I (Room 305) was used to store older runs of journals. When UH tried to save money by turning off the air conditioning during times the Library was closed, mold became rampant especially in 305 that lacked sufficient air circulation. Doris Hayashikawa recalled that Ethel Ito and herself used to sit on the lanai, rubbing book bindings with a mixture of alcohol and thymol and leave the bound volumes in the sun to kill the mold. Eventually, long dormant beetles awoke with the cycles of cooling

and heating and attacked books in other areas of the building. The Library fumigated numerous stack areas at great expense. (Sunning books on the **3rd floor lanai**, left, mid-1980s)



In late 1986 a structural problem, which still continues to haunt the



Library on several floors, created a serious health hazard for people and a potential catastrophe for books. The ceiling of the 3rd floor of Phase I began leaking during heavy rains, causing chunks of the ceiling material containing asbestos to fall.[116] Affected ranges of stacks were **tented with plastic sheets** (above) and workmen were called to clean up the asbestos residues. A few years later, the 5th floor roof also developed leaks, threatening the valuable materials of Special Collections.

Weeding of the collection was difficult and tricky. Doris Hayashikawa noted that during the time the library belonged to the Center for Research Libraries she sent a run of viticulture (grape) journals to them. In subsequent years, vineyards and wineries were established on Maui, an unanticipated development after she had weeded the collection.

During her undergraduate work at UHM, Doris Hayashikawa worked in Henke Hall, doing quality control assays, and later found it interesting to have as library patrons her former professors and bosses. She'd also worked as a student in Sinclair Library when Joyce Wright was head of Reference and Shiro Saito was a reference librarian. When she returned decades later as their colleague, Wright was head of the Asia Collection and Shiro was Head of Collection Development.

Viola Furumoto, Doris Hayashikawa, and others in the department taught science reference courses at the library school in their spare time. The classes were often rather small, but their students were enthusiastic.

Doris Hayashikawa reported enjoying her tenure in SciTech and missed it after switching to Technical Services. As of 2005, she is back to reference work as a medical librarian with Kaiser in Santa Clara and continues to use all the skills and knowledge she gained during those challenging years at UHM Library.

Hamilton Library received a remarkable gift from an alumnus in 1986: a set of 738 colored botanical etchings done in the 18th century. Only 110 sets were printed. When Cook made his first voyage in 1768, his crew included a botanist named Joseph Banks and an artist, Sydney Parkinson. Back in England, Banks spent a fortune having 738 copper plates engraved from Parkinson's drawings. They were called "**Banks' Florilegium**"(below)—Latin for "flower collection." The project was abandoned before



the prints were made. They remained in their 18th century wrappings until the 1960s when Alecto Historical Editions of London discovered them. The full set costs 69,000 pounds sterling or about \$100,000. "Banks' Florilegium" became the milestone gift to the library (2 millionth volume). It was given in memory of Jessica Rea by her son, Charles Pedric Rea of Saudi Arabia. Charles Rea was born in Waipahu and was a graduate of Iolani School and UH, where he served as chair of the Board of Publications in 1958.[117]

SciTech from 1986—1991:

- Nina Horio (Head, 1989-1993)
- Kris Anderson (began October 1991)
- Marilyn Browning (1990-1992)
- Randy Buettner (1987-1990, PRAISE intern to 1989, then reference librarian)
- David Coleman (1988-2002)
- Viola Furumoto (retired June 1988)
- Richard Hanna (1989-1991)
- Doris Hayashikawa (resigned June 1989)
- Basil Idler (retired December 1990)
- Ethel Ito
- Paula Szilard

David Coleman, a graduate student in Tropical Agriculture, became an avid user of science and technology resources. He later enrolled in the Library School, received his MLIS, and joined the SciTech staff after Vi Furumoto had retired. His federal PRAISE (Pacific Regional Aquaculture Information Service for Education) grants provided information services in aquaculture throughout the Pacific and were a great asset to the department.



(front, left to right, **Nina Horio, Kris Anderson; Ethel Ito, Paula Szilard, Marilyn Browning, David Coleman**, back, left to right, May 1992)

others to dial-in and search electronic databases like Aquatic Sciences and Fisheries Abstracts (ASFA). (**CD ROM towers** in SciTech workroom contained Agricola, ASFA, MEDLINE databases on CDs, right, 1994) Systems created the Library's first LAN in 1989 during the asbestos removal project.[106]

Current issues of selected chemistry journals were sent routinely to the Chemistry Department's reading room for review. Ethel Ito kept records of due dates and missing issues. Dr. Judson Ihrig was the coordinator from chemistry. The sharing of chemistry journals was discontinued in 1993. SciTech contributed selected UH periodical holdings to the national Chemical Abstracts Service Source Index (CASSI) for many years.



The Asbestos Removal project in Hamilton began the summer of 1989 and closed the Library on May 12th for about 3 months. SciTech relocated to the Mezzanine of Sinclair



Library. Some staff members had moved to Sinclair early in 1987, citing health concerns with asbestos.[118] (SciTech moving into Mezzanine, 1989, **Idler, Horio, Coleman**, left to right)



Librarians at this time included Nina Horio, Head; **Randy Buettner** (above, 1987), David Coleman; Richard Hanna, Basil Idler; and Paula Szilard.



During his first week at library school in 1972, **Rick Hanna** (left, 1988) recalled while paddling out to go surfing at Ala Moana he saw his Basic Cataloging professor Margaret Ayrault swimming. He stopped to say “hi,” and she ordered him out of the water and back to UH to study. He thought she was joking and paddled out to the breakers. She called on him every class session for the next two semesters, forcing him to become one of her best cataloging students (as she later confided to him). After graduation he spent the next 15 years doing science reference in California, working as a marine science technician, and graduate work in paleoceanography before returning to SciTech. He followed Hayashikawa and took over her areas in chemistry, physics, computer science, and geological sciences. His first year was spent learning to search Chemical Abstracts and Beilstein. The second year he concentrated on beating John Awakuni (Fiscal) at tennis over lunch. For the last 15 years he has been Librarian at the National Tropical Botanical Garden on Kauai.[119]

Looking back over the past 30 years since Statehood reveals some interesting statistical comparisons and contrasts:

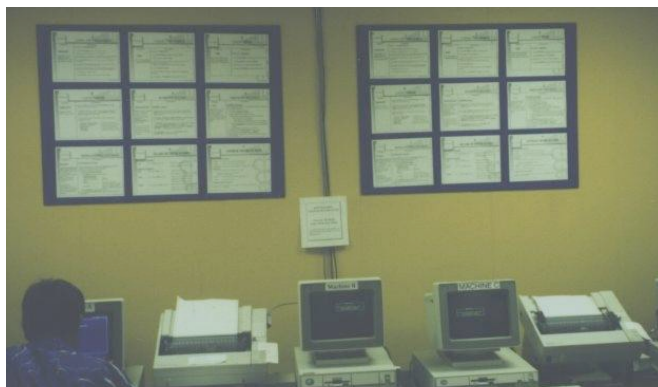
- 1959: UHM had 8,500 students and nearly 800 faculty. Total operation budget was \$8.9 million. Sinclair Library had 281,000 volumes;

- 1989: UH System total enrollment was 43,000 in regular programs, and 22,000 in special programs. Full time faculty totaled 2,400. Annual operating budget was \$375 million. UH offered 120 associate degrees, 115 Bachelors, 137 graduate degrees. Hamilton held more than 2 million volumes.[120]

1990s And the Internet

Daniel Bell's 1973 seminal work, *The Coming of Post-Industrial Society: A Venture in Social Forecasting*, served notice that the United States was no longer a smoke stack economy. The "information age" had arrived when it was announced that half of the GNP of the US resulted from the production, processing and distribution of information. This, of course, had a major impact on libraries, library schools, the profession of librarianship, and society as evidenced by the near ubiquity of today's Internet.

By the 1990s, computers were made available for UH students and researchers to do their



own searches from CDs containing databases mounted on computers placed in carrels or computer rooms available to the public. (**SciTech Computer Room** behind reference desk with 6 computers for database searching by patrons, left, 1995) The librarian's role in electronic searching shifted to providing instruction to students and faculty on how to do effective computer

searches. Most electronic searching became free to users. By 1997 there were 232 public and staff computers in use within the Library.[106]

In September 1989 the UH faculty ratified a new contract with the University that provided a salary increase averaging 36% over the next four years. **Nina Horio** (below 1993), who was President of the UH Manoa Faculty Senate at the time, reported that the National Education Association had indicated no other higher education contract settled that year in the US or Europe was as good as the UH agreement.[121] With her persistence, skillful negotiations, and diplomacy, Horio not only won the successful pay raise for faculty, she also helped change the status for UH librarians. Prior to July 1987,



librarians had been lumped in with Specialists (S). Today, thanks in large part to Horio, librarians have their own (B) classification. Horio was the first UH librarian to receive the Excellence in Librarianship Award in 1993 (later renamed the Nina Horio Excellence in Librarianship Award in her honor). Paula Szilard also received the Excellence in Librarianship Award in 1995.

- In 1990 UH became the nation's 21st Space-Grant college. UH is distinguished as one of only 4 universities designated for Land-Grant, Sea-Grant and

- Space-Grant programs. Others are MIT, U of Washington and U of California.[122]
- *Money* magazine's 1990 college guide ranked UH Manoa No. 10 on a national list of 100 public institutions that "deliver the best education for the buck." [123]

SciTech from 1991-1995:

- David Coleman, Head (1993-1996)
- Kris Anderson
- Marilyn Browning (resigned 1992)
- Richard Hanna (resigned 1991)
- Eileen Herring (began March 1995)
- Nina Horio (died August 1994)
- Ethel Ito
- Robin Kenny (casual hire reference librarian between 1994-1995)
- Paula Szilard (retired June 1995)
- Paul Wermager (began June 1992)



Robin Kenny, left, 1995.

Tim Berners-Lee wrote the first Web browser, called the WorldWideWeb, on Christmas Day 1990 and released it in 1991. His remarkable "present" has changed the world in dramatic ways.



Mosaic, the first graphical interface for the Web, was developed in 1993 and a year later was called Netscape.

(Internet Explorer became the leading Web browser in 1999.) [124] Beginning in November 1994, the library-wide "Internet Initiative" trained staff on the emerging technology, covering topics like text-based Gopher and Veronica to the graphical World Wide Web. The three stages of training, spread over eighteen months, were designed to develop Internet skills, improve Internet services and applications, and help staff answer users' technical questions after the installation of 90 public microcomputers in December 1995. [125]

- In August 1991, a 26-year-old UH graduate student while doing research in Hamilton Library found evidence among WWII-era documents that would lead to eligibility for federal reparations totaling \$10 million for dozens of residents who were forcibly evacuated from Hawaii. [126]

Until the mid-1990s, library patrons' usage of online resources was limited primarily to sources within the library like indexes on CD ROMs or the "Journal Article Indexes" (e.g., UnCover) on UHCARL. Although there was considerable discussion and anticipation of online delivery for full text, very few publishers offered full text and if they did, it was prohibitively expensive. Librarians who did mediated searches for faculty or researchers continued to use the online resources of MEDLINE, STN (Scientific and

Technical Information Network; i.e., Chemical Abstracts), or DIALOG up to the late 1990s. SciTech negotiated a contract with CINAHL Direct (online version of Cumulative Index to Nursing and Allied Health) in 1995, and UH became the second university in the nation to offer electronic, multi-campus access to all ten of its campuses.[127]

- By 1993 the Preservation Department, which was created in 1990, utilized a freezing container behind Hamilton to eradicate bug-infected books with 4-degrees-below-zero temperatures for 72 hours.[128]

SciTech offered its email reference service (sciref@hawaii.edu) in 1995, and its homepage became operational March 1996 (currently <http://www.hawaii.edu/sciref/>).



(Friendly SciTech staff, front left to right, **Paula Szilard, Ethel Ito, Eileen Herring, Kris Anderson**; back, **David Coleman, Paul Wermager**, 1995)[127]

By 1993 the overcrowded shelves of Hamilton Library, including SciTech's expanding periodical collection, had reached a critical level. Books began replacing students. In 1983, there were 1700 seats for student that dropped to only 800 in 1993. Although there were plans in the early 1980s to build Phase III for Hamilton Library, construction of the Addition (Phase III) was delayed until 2000. To free up more shelf space, the Bound Serials Transfer Project moved more than 350,000 older volumes from Hamilton to Sinclair and was completed a year and a half later in 1994.[129]

SciTech transferred more than 4,300 science titles. In 1995 SciTech had a journal collection of more than 3,500 titles, invoiced at \$1.6 million, which represented 57% of the Library's total budget. SciTech supported more than 32 science undergraduate degrees, 41 graduate degrees and 33 PhD programs.[127]

SciTech from 1996 to 2002:

- Dave Coleman (Head to December 1995, leave of absence, November 1995—December 1996; resigned May 2002; Head of Leeward Community College Library 2002-2006; retired from UH 2006)
- Paul Wermager (Acting Head, December 1995-June 1996; Head, July 1996—)
- Kris Anderson
- Eileen Herring
- Ethel Ito (retired May 2000)
- Sandra (Sandie) Yukitomo (Library Technician V, 2000-2005)

The fiscal year of 1995-96 will have a lasting negative impact on the Library. Three economic factors—collapse of the state sugar and pineapple industries and a Japanese-Hawaii investment bubble—converged to produce a huge financial crisis for the state and the library's worst budget cuts.[39] The library's monograph budget was slashed from

\$350,000 (1993-94) to only \$77,000. SciTech canceled more than \$200,000 of science periodical subscriptions after a careful review of titles by our faculty, researchers and graduate students. SciTech librarians accompanied the University Librarian John Haak to visit all science departments on campus to discuss the budgetary problems and solicit their input.[130]

Adding to these financial woes, an early retirement incentive program, established by the legislature to begin in June 1995, was expected to ease “some of UH’s budget problems but backfired and added to the fiscal burden”. [131] Some departments in the library lost up to half of their staff. SciTech, which over the years had managed to increase to 5 librarians, lost one position to an initial hiring freeze and later to the state, which included it in the approximately 300 positions reclaimed from UH. The result was an unprecedented “brain drain” of expertise and institutional memory for the library.

- Effective 15 September 1995, the general public no longer could borrow books from UH Libraries unless they purchased community cards.[132]
- Library statistics for 1995-96: 1.1 million visitors; 165,768 reference questions answered; 4,362,441 photocopies; 558,500 items borrowed; 999,054 online search sessions; 2,431 students received classroom instruction.[133]

To help combat persistent inflation and limited budgets, the library began to explore local and national consortiums to reduce subscription prices. One of the earliest forms of resource sharing had been ongoing for many years between SciTech and Hawaii Medical Library (HML). Through an information agreement, HML purchased clinical-based medical materials while SciTech collected research-orientated medical works. In February 1997, SciTech offered MEDLINE online to UH users with a subscription to Community of Science (COS, a consortium of libraries and corporations) at a reduced cost as compared to the former restrictive CD ROM-based subscription. In 1999 SciTech made GeoRef (geology index) available through cost sharing with SOEST (School of Ocean and Earth Science and Technology).[127]

In the fall of 1998 and 1999, SciTech hosted Open House meetings for science faculty in the library staff room to thank the faculty for their support of the library during the budget crunches, inform them of our new electronic services, and update them on plans for the Library Addition (Phase III) and renovations planned for Phase I & II. One of the 1998 invitations produced in a serendipitous and fortuitous result for SciTech. In addition to faculty, we also sent invitations to prior donors to SciTech. The wife of a donor requested a meeting to discuss donating the research and unpublished work of her husband (Botany Professor Emeritus) to the Library. She later arranged a deferred payment charitable gift annuity (estimated at more than \$100,000) to fund an endowment to benefit the “Science & Technology Collection.”

- 1997-98 Library statistics: 1,351,603 visitors; 561,495 items borrowed; 131,093 reference questions answered; 1.5 million databases/online searches; 4,308,402 photocopies.[134]



- Groundbreaking for the Hamilton Addition (Phase III) was held 20 October 1998, near the old Snack Bar. (**John Haak**, far left, with a 'o'o, the traditional Hawaiian digging stick) Governor Benjamin J. Cayetano, President Kenneth P. Mortimer and others dignitaries were also present. Phase III opened in February 2001.



Joyce Watson (left, 1998) the Library's Building Planning Coordinator and the only librarian in Hawaii qualified in this specialty, not only supervised the design and planning for Hamilton's Phase II, she also managed the plans for Phase III and worked on the renovations scheduled for Phase I and II that were finished in 2002. Watson saw the Addition (Phase III) completed before she passed away in March 2001. A tree was planted in her honor on the Maile Way side of Hamilton Phase II.[135]

The Changing 2000s

As the new millennium approached, hope for a new era was tempered by fear worldwide. Some predicted an Armageddon of sorts with financial markets crashing, the banking industry grinding to a halt, planes falling from the skies, and gridlock on highways all caused by computers' Achilles' heel: **Y2K**. The computerized abbreviation for the 2000 year problem—also termed the “millennium bug”—was coined by David Eddy, a programmer, in 1995. In the early days of computers, storage space was at a premium, and computer programs stored years with only two dates. It was feared that when midnight of 1 January 2000 arrived, it would be interpreted as 1900 and result in mass chaos in the world that had grown so dependent on its computers. However, no major computer failures occurred when clocks rolled over to 2000.[136]

The millennium bug, however, did have two unanticipated effects; one in the Library and the other nationally. Many in the Library had become disenchanted with UHCARL and worried CARL was moving towards the public library sector and away from academia. Several vendors of library management systems were reviewed in 1998 and 1999. Endeavor Information Systems' Voyager was selected in 2000 based on its strong customer base of research libraries and guarantee that it had fixed the Y2k problem. One of the remedies that many businesses had implemented nationwide to deal with Y2K was to install off-site computer backup systems. Although the September 11th attacks destroyed hundreds of offices in the World Trade Center, potentially crippling key segments of the economy, most of the businesses had purchased off-site backup systems for their data files, thus limiting the economic impact of the tragedy.

Y2K paled in comparison to the most dramatic and on-going transformations that



occurred in the Library during the 2000s: **Change**. Everything and everyone was affected, sometimes positively, other times with mixed results, and once in a devastating way.

Leadership changed: John Haak retired in May 2000, and **Jean Ehrhorn** (left, 2005) became Interim University Librarian until November 2001.[137] With her years of experience as Associate University Librarian and her calming presence, she was a rock of stability in the turbulent sea of changes facing the Library.

Building changes: The much anticipated and long overdue Addition to Hamilton (Phase III) became a reality in February 2001 when it opened its doors to users. The six-story structure added about 82,000 usable square feet to Hamilton Library for a grand total of 305,000 square feet—or the area of approximately six football fields.[138] The Addition was to become the new home for the Science and Technology Reference Department with its spacious reference desk located on the first floor and its collection of about half a million volumes on the upper four floors of stacks. During its first five years, the Addition functioned as the only section of the Library open to the public when Hamilton Phase I and II were closed twice—once for planned renovations, the other caused by a natural disaster.



Hamilton Addition (Phase III), front (left) and side (right) view, on Maile Way; Hamilton Phase II, far left, late 2001.

Ironically, the SciTech staff was the last to move into their new home, which was occupied by other departments through Summer 2001. Although SciTech remained on the 3rd floor of Phase II until June 2002, about one-third of its collection (Phase I) moved to the still unopened Addition in late Fall 2000. Patrons needing items from the relocated science collection needed to page them until February 2001.[139] This shifting of some of SciTech's book signaled the start of yet another major change within the Library.

Renovation Changes: The new Addition provided the Library with two essential renovation catalysts: its construction costs had been several millions under budget, which was utilized for renovating the older parts of Hamilton, and its empty floors offered much needed “surge space” for relocation of staff and collections. Infrastructure and public area improvements for Phase I and II included: asbestos removal, air-conditioning replacement, electrical upgrades, addition of space for public computers, new electronic classrooms, relocated circulation desk, expanded microforms and current periodical reading rooms, space for the expanded William Kwai Fong Yap Memorial Room, new Map Collection Room, expanded Special Collections Reading Room, and new

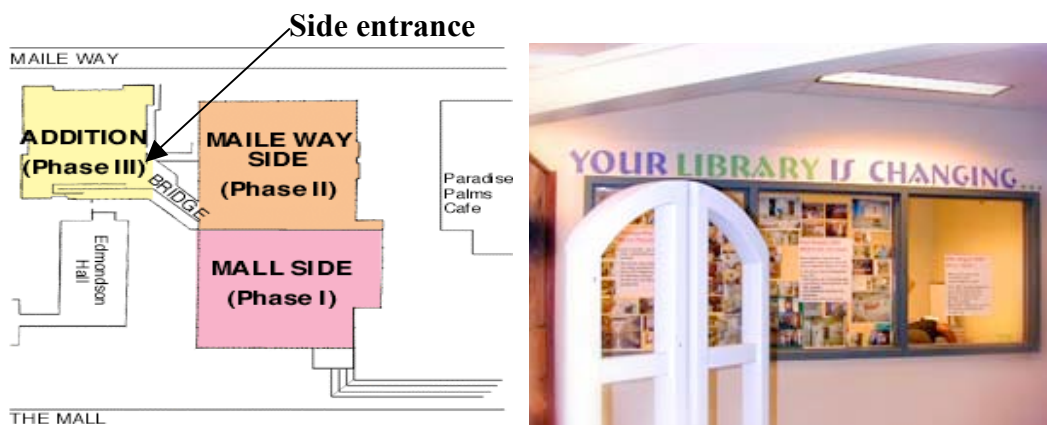
conference rooms. Some departmental offices and staff area were remodeled also, and the Library and Information Science program area (Ground floor) was reconfigured.[140]

Carol Schaafsma, former Collection Services Division Head, returned from retirement to help choreograph this complex and massive “musical chairs” of shifting people, computers, books, equipment, and services.[138] Essentially, all the Library's programs and staff would be squeezed into one-third of its space. The renovations of Phase I and II had two major parts: Summer 2001 and Fall 2001 to Fall 2002.

Renovations – Summer 2001

After the books in Phase I (the partial collections of SciTech on the 3rd floor and Business, Humanities and Social Sciences on the 2nd floor) were moved to the Addition, workmen built wooden and plastic-lined barriers to block off all access to Phase I. Circulation was the last to move over to the Addition before all of Phase I was closed and remained closed for almost 14 months.

During Summer 2001 all of Hamilton was closed to the public except for the first floor of the Addition. The new entrance was via the side emergency doors (**map** below, left) of the Addition along Maile Way. The other five floors of the Addition were occupied by the 10 departments displaced by the asbestos removal and construction work conducted in Phases I and II. The simple **sign**—“Your Library Is Changing”—above the new entrance door to the compacted Library was thought by many to be a gross understatement (below, right).



The SciTech reference desk became a multipurpose service point for Reference (librarians from all public service departments combined to offer reference service), Circulation and the Business Office. Hawaiian and Pacific librarians staffed a modified reference desk and reading room in a 1st floor classroom (A-156). Patrons needed to page everything online or with paper slips. Student runners fetched paged items from the closed sections, often with a 2-hour turn-around time. Library visitors had online access to about 20 computers.

Renovations – Fall 2001

Before the 2001 Fall semester, many of the temporarily displaced departments moved back to their previous locations, and the Library reopened its refurbished Phase II. Public access the Library was through the Addition's side door, which remained the only public entrance to the Library until May 2002 when Circulation moved back to the newly configured Phase I main entrance. The Stacks crew did an incredible job of moving more



University Librarian Diane Perushek, Sen. Dan Inouye, President Evan Dobelle and Regent Walter Nunokawa.

than 1 million books during the renovations. SciTech finally settled into its new home in the Addition the last week of June 2002. To celebrate more than four years of ongoing construction and renovations, a **re-dedication ceremony** for Hamilton Library was held on November 6, 2002, attended by the Honorable Senator **Daniel Inouye**, UH President **Dobelle**, and others (left).[140]

Change from Ownership to Access: By the late 1990s and early 2000s commercial publishers greatly increased the availability of full text, initially bundled as “free” with paper subscriptions and later as an “online access” option. The increasing supply of full text was met by a greatly increased demand for it by users, especially science researchers, faculty and students. The Library began a major shift to electronic subscriptions in 2002 when the new University Librarian, Diane Perushek, who began December 2001, received a \$1 million budget supplement to expand online access. In the summer of 2002 the Vice Chancellor for Research and Graduate Studies funded a subscription to ISI Web of Science®, the Institute of Science’s premier—and expensive—portal to the Science Citation Index Expanded that includes the Science, Social Sciences, and Arts and Humanities Indexes. The Library subscribed to SciFinder Scholar® (Chemical Abstracts online) in 2001 and two multidisciplinary databases, EBSCOhost and ScienceDirect (Elsevier), that offered users access to thousands of journals. In 2005 the Library added ScienceDirect’s “Freedom Collection” and paid more than \$1 million for it in 2006.[141]

Despite often flat or reduced budgets, the Library has continued to shift its journal subscriptions to electronic access. Canceling print journals for online-only access reduces processing and bindery costs and conserves valuable shelf space. However, even these cost-saving strategies could not match or overcome the rising costs of journal subscriptions, inflation rates, foreign exchange fluctuations, and other publishing costs. The Library instituted two Serials Cancellation projects in 2003 and 2005 that solicited input from faculty and students with Web-based surveys. Another large serials cut (\$500,000) was anticipated for 2007 but was forestalled for a year.

In April 2003 SciTech was the first library department to offer Scholar Workstations—eight computers equipped with Microsoft Office software—for UHM students, faculty and staff as a pilot project. The computers were located in the Computer Room adjacent to the SciTech reference desk. There are now about 80 Scholar Workstations in Hamilton Library that are heavily used by students, enabling them to do most of their educational and research work within the Library. In the late 1990s during the initial planning stage for the Addition, SciTech staff anticipated the growing demand of its users for online access and requested that sufficient data jacks be included throughout the new building. Today, many students can be seen busily at work on all floors of the Addition with their laptops. Wireless access is also available in selected areas of Hamilton and on all floors in Sinclair Library.

Hamilton Library experimented with being open 24 hours three days a week in Spring Semester 2004. Student demand for longer hours and extra funds from the Manoa chancellor resulted in the pilot project called 24/3. Hamilton was open continuously from 7:45 am Monday to 11 pm Thursday. Users needed a valid ID to gain admission. Usage statistics indicated very low usage after 2 am. The project was not continued. In 2005 students successfully lobbied UH Administration and the Legislature, resulting in the passage of legislative bill to provide funding for extended hours at the Library. In Fall 2007, Hamilton Library will be open 24/5, Sunday through Thursday.

Manoa Flood, 2004



On Saturday evening, October 30th (Halloween eve) 10 inches of rain deluged the Manoa valley area in a 12-hour period with the highest rainfall recorded at over 5 inches per hour at the Lyon Arboretum.[142] With debris clogging bridges on the **Manoa Stream** (left, 31 October 2004), an 8- to 12-foot wall of water, mud, and debris swept onto streets, into homes in Manoa and through the

University of Hawaii campus. Hamilton Library lay in the middle of the raging torrent. The moat surrounding the Library on three sides quickly flooded with water. A basement fire door on the Maile Way side buckled with the weight of the water and the muddy river surged into the ground floor. Most of the tall, narrow windows in the moat remained amazingly intact; a few apparently were breached by swirling debris.

In the ground floor, all of the Collections Services' (**Acquisitions, Cataloging and Serials** departments) staff offices and work areas; **Government Documents and Maps'** (below) collections, offices and public areas; Library and Information Science program's



offices, classrooms and study areas; and the Library's central server room were completely submerged, in most cases up to the ceiling. The Library had so much infrastructure damage that it had to be isolated from the UH electrical grid before power could be restored to the rest of the campus.[106]

Thankfully, the flood occurred on a Saturday, late in the evening, after the Library had closed. However, there were two-dozen people still in the closed Library at the time of the flood. Twenty-four Library and Information Science (LIS) students were attending a day-long class on library management (LIS 650) in a ground-floor classroom (4V) with their instructor. After thick brown water started filling the room to ankle depth, the students heard a loud, low BOOM (probably the sound of the fire door imploding).



Previously, the lights had gone out and the whole campus was dark. (Ground floor **clock** at time of power outage, near left) Quickly, a tide of brown water rushed in filled with pieces of computers and furniture. The

students fled from a flooding hallway and broke a ground-floor window to make their harrowing escape. A late-working library staff member on the first floor saw the water rushing past a stairwell and heard the students retreating. LIS assistant professor Andrew Wertheimer reported, "the first wave came through the hall like a tsunami." (**Lori Saeki, Jody Brown, Professor Wertheimer**, left to right, standing near the "window of opportunity," above, 2005)[143, 144]

After hearing about the flood, Lynn Davis, Head of Preservation, hurriedly returned from her sabbatical to spearhead the recovery work. The first volunteers showed up Sunday morning at 7 am to "triage" the disaster. Conservation experts from Bishop Museum, state archives, Iolani Palace, and elsewhere came to help. Staff spread out across campus,

carrying black plastic bags, to retrieve documents that had been washed away. Some items were located as far away as Dole Street and the athletic fields in the Quarry. Volunteers worked doggedly to salvage some of the 90,000 maps and many thousands of archival photographs that had been drenched in a muddy bath. Most irreplaceable were one-of-a-kind materials, like the first known aerial photographs of Micronesia or rare maps dating to the 1700s.

- Paula Szilard, who was vacationing in Honolulu at the time, kindly volunteered in the recovery work.

Conservationists knew there was only 48-hours in which to rescue the most valuable items from their water-logged environment. Damaging **Mold** (below left) begins to



grow on items

after that time. Thousands of the rarest **pictures** (above, right) had to be washed and



hung to dry. Most

of the maps, lying flat in wet, muddy desktop-sized metal drawers, needed to be rinsed and transferred to refrigerated containers donated by Matson. (**Nancy Stack, Lois Kiehl** loading rinsed maps, above, left.) Thousands of water-soaked books and documents required boxing before being placed in the containers to be frozen. (**Susan Johnson** boxing books, above, right; note her handy headlamp, essential and very useful in the darkened building.)

In addition to destroying and damaging physical items on the ground floor (books, journals, maps, CDs, videos, personal files and belongings of staff, equipment and furniture), the flood also destroyed the virtual presence of the Library. Voyager—the online catalog—was gone, cutting off the Library from its users. More than \$300,000

worth of technology hardware and software was lost. Servers used to authenticate users trying to access electronic resources were rendered useless. Thanks to backup tapes, donations from cooperative vendors, and the work of Assistant University Librarian Bob Schwarzwald, the Systems staff and other library and campus personnel, the online catalog (Voyager), miraculously, was up and running in 5 days! On November 3rd, Wing Leung, the Library's IT Specialist for Server Support, activated a replacement proxy server and restored files from a tape backup, which was fortunately located on a floor out of the flood range. As a result, students and researchers were once again able to access electronic resources even though the Library was physically devastated and closed.[106]

The Addition and the SciTech department did not sustain significant damage, thankfully,



from the flood. Water filled the loading dock area and flowed under SciTech's side

entrance doors, soaking carpets, floorboards and was wicked up into the drywalls. (Entrance doors not visible on right side of photo, left; note height of **flood water level** on **loading dock** wall facing Maile Way.) Flood waters also entered around the Addition's Maile Way windows, resulting in damage to

carpeting and the floor-mounted power and datajacks in that area. Some water also managed to seep into the ground floor of the Addition, causing minor mechanical and electrical problems.

After several long days of concentrated recovery work in the dark, muddy basement by library staff, the ground floor was sealed off for health and safety reasons and to prevent humidity levels from rising in the rest of the Library. Two Texas-based disaster management companies were contracted: BMS CAT did cleanup and environmental maintenance work while Belfor worked on document recovery. In a few days BMS CAT installed several **mechanical air handlers** (below, left) around Hamilton to pump fresh air into the dark, closed building through large yellow plastic caterpillar-like tubes that reached to Hamilton's upper floors. A maze of clear-plastic **air ducts** (below, right) ran along the interior ceilings, supplying cool, dehumidified air to prevent an additional disaster of mold attacking and destroying the millions of other books in the Library.

Within two weeks, FEMA (Federal Emergency Management Agency) supplied 2 huge diesel-powered generators (one as backup) to provide continuous power for lights and clean-up operations. One of the two generators would run non-stop almost a year along Maile Way—until Saturday 17 September 2005—to provide power to Hamilton Library until it was reconnected directly to a HECO power-line. After the two generators were turned off, they were quickly flown to New Orleans to assist with the on-going Katrina recovery efforts in New Orleans.



Luckily, the Addition was connected to a different power grid than the rest of Hamilton, and thus Library staff, and later the public, had access to electricity, air conditioning, computers, bathrooms, and functioning elevators. After the flood, SciTech and the Addition once again became temporary homes for all staff displaced from Phases I and II. Fiscal set up temporary quarters in the SciTech workroom. Interlibrary Loan moved into the William K. F. Yap Room (A-153), adjacent to the SciTech workroom. Circulation, Business Office, and combined Reference desks shared the cramped space at SciTech's front desk. Serials moved back to the ground floor. Other library departments resettled in spaces on the Addition's other floors. By the middle of November a paging system was operational, allowing students and faculty to request library items and pick them up from the 1st floor of the Addition.

(BHSD reference librarian **David Flynn** at combined SciTech Reference desk,



foreground; **Circulation** staff member at Circulation computer, background; “**paging**” staff and students; **side entrance door** open, far back; note cordoned-off area, public access was initially limited to the reference desk, bathrooms, and photocopier room on left side; November 2004)

Limited library services continued to be offered from the SciTech 1st floor until 8 January 2005 when the first four floors of the Addition were opened again to library users. Paging of materials from the closed Phase I and II areas continued until 29 March 2005 when all of Hamilton Library—except the ground floor—opened to the public.[145] The FEMA generators powered the building's lights, air-conditioning systems, computers, and three functioning elevators in Phases I and II until September 2005.

The severely flood-damaged fire alarm system for Phases I and II resulted in another unanticipated crisis. By 7 April—10 days after the Library reopened—18 cases of arson

occurred. The small, deliberately set fires on the 2nd, 3rd and 4th floors damaged books, newspapers and furniture, and were a major safety threat since a fire could quickly spread among the library's large paper collections. Security guards were quadrupled to patrol the floors while carrying air horns. Library visitors had to show ID cards and sign-in.[146] A video surveillance system was installed and remains in place today. No arsonist or arsonists have yet been apprehended.

The total losses incurred by the Library are still being tabulated. Government Documents and Maps was the hardest hit department. About 95% of their approximate 2 million items dating back to 1907 were damaged or lost. About 36,000 items awaiting processing in the Collection Services departments were also lost. Ordering of replacement items with FEMA funds will be ongoing for several years, but many materials—one-of-a-kind items, gifts, out-of-print publications—may never be purchasable. Of the approximately 33,000 maps saved, more than half were sent to the Belfor document recovery company in Texas for cleanup. The remaining maps, mostly irreplaceable Hawaii and Pacific maps, will be painstakingly cleaned by hand in the 5th floor Preservation department for many years to come.[137] Total monetary damage estimates for Hamilton Library may exceed \$40 million. The University of Hawaii at Manoa suffered about \$81 million in damage to 32 buildings from the flooding. On 21 April 2005, Senator Daniel Inouye announced that the U. S. Senate unanimously approved a flood relief appropriation bill of almost \$40 million for the University of Hawaii and Manoa Valley. UH insurance will cover only \$25 million of the flood losses.[147]

Library Hero

One very outstanding member of the University of Hawaii at Manoa Libraries deserves special recognition not only for his 20 years of dedicated service to the Library but also for his incredible guidance and coordination during and after the flood. **John Awakuni** (below), Fiscal Officer for the Library, successfully managed the overwhelming fiscal demands and deadlines in the wake of the devastating flood with determination, patience,



and grace. He never missed a deadline despite the "triple burden" of handling his normal job while coordinating purchasing, documentation and follow-through required by state and university insurance agencies and the Federal Emergency Management Agency. Long after other library employees had gone home after work, he could be found at his desk, crunching spreadsheet numbers and making sure invoices were paid in a timely way. He also drove his car to pick up critical supplies for the flood recovery work. In awarding John Awakuni the 2005 "State Employee of the Year," Governor Linda Lingle said, "John's outstanding competence, tireless dedication and sheer perseverance displayed during the difficult months following the flood make him one of

the true heroes on campus.”[148, 149] Interestingly, John Awakuni had an earlier connection with the Library. During 1966 and 1967, he worked as a student assistant in Government Documents while pursuing his degree in accounting and finance.[40]

SciTech from 2003 to 2005:

- Paul Wermager, Head (1996—)
- Kris Anderson
- Eileen Herring
- Merlita Nazareno (Library Technician V, December 2005—)
- Sara Rutter (began May 2003)
- **Sandra (Sandie) Yukitomo** (photo below; SciTech Library Technician V, September 2000-2005; Secretary to the University Librarian; retired January 2007)



Over the years, Science and Technology Reference librarians have been actively involved in outreach programs and grant projects, ranging from local to the international level. As early as 1971, Barbara Tillett established the Ocean Science Information Center in the Library. Dave Coleman began the Pacific Regional Aquaculture Information Service for Education (PRAISE) project in 1989 with funding from the USDA Regional Aquaculture Center Program. Its goal is to support the development of the aquaculture industry in the Pacific Region by promotion of information transfer. Kris Anderson, who took over the project after Coleman’s leave, is the current PRAISE coordinator. PRAISE has been funded continuously for the past 18 years. The Pacific Island Gray

Literature Project is one of the unique endeavors of PRAISE. This project locates works produced in the Pacific Islands that is not widely published or available and indexes the relevant material in AGRICOLA, the database of NAL, and Aquatic Sciences and Fisheries Abstracts (ASFA) produced by Cambridge Scientific Abstracts.

In 1995 Eileen Herring began to coordinate the library component of the Agricultural Development in the American Pacific (ADAP) project with funding from the U. S. Department of Agriculture. She provides literature searches, copies of documents, and interlibrary loan services to researchers and extension agents at the Pacific Land Grant institutions in 11 island nations. ADAP has been funded for the past 12 years. She also was a co-investigator for a one-year grant (2004-05) by the United States Agency for International Development to rebuild the agricultural research infrastructure at Iraq’s University of Mosul, including the University’s library that was devastated in the Iraq War. She used as her model the services provided by ADAP and PRAISE to assist Mosul’s PhD students and researchers with their ongoing work.

The expanding access to electronic publications created a frustrating problem for many library users: not knowing what digital resources are available and where and how to find them. To address this problem in the medical area, Paul Wermager was a co-investigator for a National Library of Medicine's Internet Access to Digital Libraries Grant in 2002 that funded the POI (later termed ePOI for Electronic Pathways to Online Information)

Project. The purpose of ePOI was to provide a single web-accessible portal by which biomedical users could search the relevant digital resources available from the University of Hawaii at Manoa Library (UHM Library) and Hawaii Medical Library (HML was renamed the Queen's Medical Center Hawaii Medical Library in 2004). In 2003 Wermager enrolled UHM Library in the National Library of Medicine LinkOut project. LinkOut allows libraries to submit holdings information for their Web-accessible resources to the PubMed database and create their own icons that link to the full text of available articles. PubMed searchers now can click on the colorful icons of either the JABSOM Health Sciences Library or the University of Hawaii at Manoa Library to obtain the full text of articles (print or electronic) for those journals subscribed to by the libraries. (examples of **LinkOut icons** below, left)

[MMWR Morb Mortal Wkly Rep. 2002 Nov 22;51\(46\):1041-4.](#)



The Library subscribed to the OpenURL link resolver, Article Linker from SerialsSolution, in 2004. Users click on the “**find it**” icon (above, right) from various electronic indexes, and Article Linker seamlessly links them to the desired electronic resource by supplying the best available path to the digital content, usually in PDF format.

Sara Rutter developed and coordinated a unique speakers series, “Saturday Morning Authors,” in Fall 2004 to highlight the published work of UH authors and the importance of the Library in the research process. The events were held in the Yap Room in the SciTech department and were well attended by members of the UH community and the general public. She organized another event— “Sea-Change in Scholarly Publishing”— as a brown-bag symposium to discuss the changing landscape of scholarly communication among UH scholars, librarians, and UH Press editors. Her popular “Authors” series is now sponsored monthly by the UH Vice Chancellor for Research & Graduate Education, and the events have been standing-room-only sessions. As an elected member of the Senate Executive Committee (SEC) of the Manoa Faculty Senate, Rutter represents the interests of the Library and its faculty on this influential campus group. She was also the Manoa Faculty Senate Web Administrator.

2006 Library Leadership Changes: In a 28 August 2006 library-wide email, University Librarian Diane Perushek announced that Chancellor Konan “will be reassigning me to her office from September 1 to December 31, 2006” to work “in support of international exchange agreements, especially that which will establish a Confucius Institute at the University of Hawaii.”[150] This announcement was preceded by several years of growing unrest and dissatisfaction among library faculty and staff with the management style and decisions of the University Librarian. In Fall 2005 the Library Faculty Senate conducted a review of the University Librarian, which resulted in a vote of no confidence that was communicated to UH Administration via then Vice Chancellor Neil Smatresk. In Spring 2006 the Vice Chancellor conducted a “360 review” of the University Librarian and other UH administrators that included input from peers, faculty and staff. The Vice Chancellor later met with four library groups (Department Head Group members, library faculty, civil service and ATP staff, and Library Administrators) and stated he was very concerned about the results of the 360 review, but the results of that administrative review have yet to be made public.

Since Perushek retained the title and position of University Librarian during her current reassignment until the end of 2006, the Library was managed by a ‘triumvirate’ comprised of Paula Mochida (Acting Associate University Librarian; later named Interim University Librarian), Bob Schwarzwald (Assistant University Librarian, who resigned July 2007) and Gregg Geary (Head, Sinclair Library). Paula Mochida, who had resigned from the Library in 1998 to work in the Office of Vice President for Academic Planning and Policy, returned to Library Administration in January 2006 after Jean Ehrhorn had retired.[151]

- UH is still a bargain although its tuition jumped the highest than any other state—22% from last year, only ten states have lower average in-state tuitions for public four-year colleges in the nation than Hawaii (\$4,257), according to *Time*, 6 November 2006.[152]

SciTech in 2006:

- Paul Wermager, Head
- Kris Anderson (1991- August 2006; appointed to Library Administration as Library Collection Officer)
- Eileen Herring
- Norma Matsukawa (temporary science librarian, November 2006—)
- Merlita Nazareno
- Sara Rutter



(Paul Wermager, Sara Rutter, Merlita Nazareno, Eileen Herring, left to right, December 2006)

Currently, the Addition houses five departments: Science and Technology Reference (permanent, 1st-4th floors), Archives and Preservation (permanent, 5th), Serials (temporary, Ground), and Cataloging (temporary, 5th). There is also a CLIC (Computer Learning Information Center) lab on the 2nd floor with 58 new computers, equipped with word processing and other software that is available only to authorized UH users.

The year 2007 marks the centennial for the University. In 100 years the College of Agriculture and Mechanic Arts that began in 1907 has expanded to a 10-campus university system and “educated a million students through five generations.”[153]

In the forty-two years since the establishment of the Science and Technology Department, it was blessed with many excellent science reference librarians and staff, strove to maintain a high level of service for its users, supported an increasing number of new science disciplines and degrees, survived far too many library-wide budget cuts, and

has moved into a modern new building that is essentially UH's first "science library" in practical terms. We expect that future science librarians will continue to build upon and expand SciTech's four decades of history and service to all its patrons.

REFERENCES

1. *The Hawaii Collegian*. Vol. 1. 1910, Honolulu: Associated Students, University of Hawaii. 40.
2. *The History of Today*, in *Honolulu Advertiser*. 2006 April 30: Honolulu. p. B1.
3. Kamins, R.M. and R.E. Potter, *Malamalama: A History of the University of Hawaii*. 1998, Honolulu: University of Hawaii Press.
4. Kittelson, D., *The Gestation of the University of Hawaii*, in *Honolulu Star-Bulletin*. 1982 March 18: Honolulu. p. A25.
5. Bouslog, C.S., *Ka Aaina: Where the Land Came From*, in *Building a Rainbow: A History of the Buildings and Grounds of the University of Hawaii's Manoa Campus*. 1983, Associated Students of the University of Hawaii: Honolulu. p. 182-85.
6. Lucas, H.F., *Founding of the College of Hawaii*, in *The Hawaii Collegian*. 1910, Associated Students, College of Hawaii: Honolulu. p. 3.
7. Mitchell, W.C. *History of CTAHR*. 1994 12/10/02 [cited 2007; Available from: http://www.ctahr.hawaii.edu/acad/AboutUs/Mitchell_History/intro.html].
8. George, W.H., *The University of Hawaii: A Short History*. 1937, Honolulu: University of Hawaii. 13.
9. Dean, A.L., *Historical sketch of the University of Hawaii. The commencement address delivered on June 7, 1926, at the University of Hawaii*. Occasional Papers, University of Hawaii. 1927, Honolulu: The University. 19.
10. Kittelson, D., *From College to University Status*, in *Honolulu Star-Bulletin*. 1982 March 19: Honolulu. p. A14.
11. Kobayashi, V.N., ed. *Building a Rainbow: A History of the Buildings and Grounds of the University of Hawaii's Manoa Campus*. 1983, Associated Students of the University of Hawaii: Honolulu.
12. Kittelson, D., *University's Beginnings*, in *Honolulu Star-Bulletin*. 1973 December 6: Honolulu. p. A25.
13. Allen, G., *University of Hawaii Once Had More Faculty Than Students*, in *Honolulu Star-Bulletin*. 1935 December 28: Honolulu. p. 1.
14. *36 Students in First Class of the University*, in *Honolulu Star-Bulletin*. 1932 March 24: Honolulu. p. 8.
15. Kittelson, D., *The University of Hawaii Library, 1907-1920*. Hawaii Library Association Journal, 1971. **28**(2): p. 3-9.
16. Severence, R.S., *Physics*, in *The Hawaii Collegian*. 1910, Associated Students, College of Hawaii: Honolulu. p. 31.
17. Wermager, P., *Healing the Sick*, in *They Followed the Trade Winds: African Americans in Hawaii*, M.M. Jackson, Editor. 2004, University of Hawaii Press: Honolulu.
18. Schmitt, R.C., *Historical Statistics of Hawaii*. 1977, Honolulu: University of Hawaii Press. 679.
19. *The History of Today*, in *Honolulu Advertiser*. 2006 April 16: Honolulu. p. 1.
20. Rock, J.F., *Notes Upon Hawaiian Plants With Descriptions of New Species and Varieties*. College of Hawaii Publications. Vol. #1. 1911, Honolulu: College of Hawaii. 20.
21. Horlings, A.R., *University Observes 30th Anniversary Next Week*, in *Honolulu Star-Bulletin*. 1937 March 20: Honolulu. p. 1.

22. Watanabe, J., *One Man's Dream, Drive Spawned University of Hawaii*, in *Honolulu Star-Bulletin*. 1982 January 28: Honolulu. p. A13.
23. Yap, W.K.F., *The Birth and History of the University of Hawaii*. 1933, Shanghai: Kwang Hsueh publishing house. 53.
24. *Memorial to Honor the "Father of UH"*, in *Honolulu Star-Bulletin*. 1982 October 19: Honolulu. p. A20.
25. Kittelson, D., *The University of Hawaii Library, 1920-1941*. Hawaii Library Association Journal, 1973. **30**(1/2): p. 16-26.
26. Cisco, D., *Hawaii Sports: History, Facts, and Statistics*. 1999, Honolulu: University of Hawaii Press. p.155.
27. Weinberg, R., *University Expends Much in Past Quarter Century*, in *Honolulu Star-Bulletin*. 1932 May 31: Honolulu. p. 11.
28. Kittelson, D., *A Brief Survey of Works Relating to the Hawaiian Territorial Era, 1900-1959*. 1965, University of Hawaii: Honolulu. p. 12.
29. *School Librarian Sees Changes*, in *Honolulu Star-Bulletin*. 1960 April 4: Honolulu. p. 14.
30. *Editorial*, in *Ka Leo o Hawaii*. 1931 September 25: Honolulu. p. 2.
31. Chou, M., *In Memoriam - Janet Elizabeth Bell, 1910-1983*. Hawaii Library Association Journal, 1983. **40**: p. 1-3.
32. Kittelson, D., *The History of the University of Hawaii Library*. 1976, University of Hawaii Library: Honolulu. p. 4.
33. *Library*, in *University of Hawaii Bulletin*. 1936 December, University of Hawaii: Honolulu. p. 43.
34. *Library*, in *University of Hawaii Bulletin*. 1937 November, University of Hawaii: Honolulu. p. 52.
35. Kittelson, D., *University of Hawaii Library, 1941-1961*. Hawaii Library Association Journal, 1983. **40**: p. 53-65.
36. *One Fourth of UH Faculty Now Doing War Work*, in *Honolulu Star-Bulletin*. 1942 May 14: Honolulu. p. 4.
37. Kittelson, D., *UH Presidential Inaugurations*, in *Honolulu Star-Bulletin*. 1986 March 22: Honolulu. p. A6.
38. *UH Librarian to Retire Soon*, in *Honolulu Advertiser*. 1943 June 19: Honolulu. p. 4.
39. Morris, N., *University of Hawaii at Manoa Library*, in *International Dictionary of Library Histories*, D.H. Stam, Editor. 2001, Fitzroy Dearborn Publishers: Chicago. p. 830-832.
40. Suzuki, M. *Dept. History, Gov Docs Maps*. 2006 8/24/06 [cited 2006; Available from: On Library intranet under Members, library-history-1, gov-docs-maps.
41. *Student Fee is Proposed for UH Library "Annex"*, in *Honolulu Advertiser*. 1949 May 28: Honolulu. p. 5.
42. *The History of Today*, in *Honolulu Advertiser*. 2006 April 15: Honolulu. p. B1.
43. Knaefler, T.K., *Looking Back at Manoa*, in *Malamalama: A History of the University of Hawaii*, R.M. Kamins and R.E. Potter, Editors. 1998, University of Hawaii Press: Honolulu. p. 56-59.
44. *Library*, in *University of Hawaii Bulletin*. 1948 December, University of Hawaii: Honolulu. p. 54-56.
45. *Library*, in *University of Hawaii Bulletin*. 1949 December, University of Hawaii: Honolulu. p. 11.
46. *Library*, in *University of Hawaii Bulletin*. 1947 June, University of Hawaii: Honolulu. p. 109.
47. Thompson, K. *Jean Charlot, Artist and Scholar*. 2006 [cited 2006; Available from: http://libweb.hawaii.edu/libdept/charlotcoll/J_Charlot/charlotthompson.html.

48. *Library*, in *University of Hawaii Bulletin*. 1950 December, University of Hawaii: Honolulu. p. 19.
49. *Facts and Figures*, in *University of Hawaii Bulletin*. 1950 September, University of Hawaii: Honolulu.
50. *About UHPA*. 2007 [cited January 27, 2007]; Available from: <http://www.uhpa.org/about-uhpa>.
51. Epstein, M., *Warm Aloha for M'Arthur on Return to U.S. Soil*, in *Honolulu Star-Bulletin*. 1951 April 16: Honolulu. p. 1.
52. *UH Library Gets Designation as UN Depository*, in *Honolulu Star-Bulletin*. 1952 August 21: Honolulu. p. B10.
53. Matsushima, T., *An Engineering Legacy*. Malamalama, 2006 January. **31**(2): p. 22.
54. *Library*, in *University of Hawaii Bulletin*. 1951 December, University of Hawaii: Honolulu. p. 51.
55. *University of Hawaii Faculty-Staff Album*. 1952, Honolulu: University of Hawaii Chapter of the American Association of University Professors. p.24.
56. *Library*, in *University of Hawaii Bulletin*. 1954 December, University of Hawaii: Honolulu. p. 54-55.
57. *Library*, in *University of Hawaii Bulletin*. 1953 December, University of Hawaii: Honolulu. p. 9,58.
58. *Library*, in *University of Hawaii Bulletin*. 1955 December, University of Hawaii: Honolulu. p. 60-61.
59. *The History of Today*, in *Honolulu Advertiser*. 2006 November 5: Honolulu. p. A1.
60. *Library*, in *University of Hawaii Bulletin*. 1957, University of Hawaii: Honolulu. p. 13.
61. *Mid-Century Report, University of Hawaii 1956-1957*, in *University of Hawaii Bulletin*. 1957 December, University of Hawaii: Honolulu. p. 26.
62. *Isle Inter-Racial Attitude Impresses Kenya Student*, in *Honolulu Star-Bulletin*. 1959 November 28: Honolulu. p. 5.
63. Zurer, P., *Paul Scheuer's Life, Work Celebrated*. Chemical & Engineering News, 2001 January 22. **79**(4): p. 70.
64. *Library*, in *University of Hawaii Bulletin*. 1960 December, University of Hawaii: Honolulu. p. 5.
65. *Library*, in *University of Hawaii Bulletin*. 1962 June, University of Hawaii: Honolulu. p. 246.
66. Jackson, M.M. and R.D. Stevens, *A Short History of the School of Library and Information Studies*. Hawaii Library Association Journal, 1991. **42**: p. 35-40.
67. Kittelson, D., *University of Hawaii Library, 1960-1983*. Hawaii Library Association Journal, 1984. **41**: p. 59-70.
68. Shaw, R.R., *Draft Report on Research Collections, Institute of Advanced Projects*. 1963, East-West Center, Institute of Advanced Projects, University of Hawaii: Honolulu. p. 14.
69. *Academic Development Plan for the University of Hawaii*, U.o.H. Academic Development Plan Committee, Editor. 1964, University of Hawaii: Honolulu. p. 132.
70. Turner, I.B., *Ralph Shaw*, in *Leaders in American Academic Librarianship, 1925-1975*, W.A. Wiegand, Editor. 1983, Beta Phi Mu: Chicago. p. 288-320.
71. *UH Hires Rutgers Library Authority*, in *Honolulu Star-Bulletin*. 1964 April 16: Honolulu. p. 35.
72. Garfield, E., *To Remember Ralph Shaw*. Current Contents, 1978 June 5. **23**: p. 504-510.
73. *Snyder is Eying Science Library*, in *Honolulu Advertiser*. 1962 February 1: Honolulu. p. B1.
74. Evinger, J., *UH To Break Ground for Graduate Library*, in *Honolulu Advertiser*. 1965 March 3: Honolulu. p. A11.

75. Verploegen, H., *U.H. Hopes to Begin Work on New Library This Year*, in *Honolulu Star-Bulletin*. 1964 January 21: Honolulu. p. A10.
76. *Graduate School Bulletin, 1965-66*, in *University of Hawaii Bulletin*. 1965 February, University of Hawaii: Honolulu. p. 66-67.
77. *Library & Information Science Program*. 2006 3/29/06 [cited 2006; Available from: <http://www.hawaii.edu/slis/general/program.htm>].
78. *Library Studies*, in *University of Hawaii Bulletin*. 1965 Summer, University of Hawaii: Honolulu. p. 66,68.
79. *In Memoriam: George Bonn*. Alumni Newsletter, Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign, 2003-2004: p. 23.
80. Gilbert, D., *New Estate Gift to Report: Memo*. 2005 January 7, University of Hawaii Foundation: Honolulu. p. 2.
81. Adamski, M., *UH Professor Margaret Ayrault had International Reputation*, in *Honolulu Star-Bulletin*. 1990 January 10: Honolulu. p. C6.
82. *UH Asks \$265,000 for Library Work*, in *Honolulu Advertiser*. 1963 November 22: Honolulu. p. A8.
83. Cunningham, J., *UH's Nobel Prize Winner Hopes to Get a Line on Fish*, in *Honolulu Advertiser*. 1966 July 21: Honolulu. p. A14.
84. *Philippines President Due for Honorary UH Degree*, in *Honolulu Star-Bulletin*. 1966 August 31: Honolulu. p. H7.
85. *Significant Dates in the History of Hawaii*. 1966 [cited 2007; Available from: <http://www.hawaiianhistory.org/ref/chron.html>].
86. *University of Hawaii*, in *University of Hawaii Bulletin*. 1965 December, University of Hawaii: Honolulu. p. 2.
87. Chase, J., *U. of H. Enrollment Projections Too Low, To be Increased Soon*, in *Honolulu Star-Bulletin*. 1966 January 19: Honolulu. p. A4.
88. *UH Librarian Retiring, To Catch Up on Reading*, in *Honolulu Advertiser*. 1965 April 30: Honolulu. p. C4.
89. Chase, J., *Popcorn Accompanies Lectures*, in *Honolulu Star-Bulletin*. 1967 January 9: Honolulu. p. B4.
90. West, S.L., *Ralph R. Shaw: The Hawaiian Years*. Hawaii Library Association Journal, 1973 December. **30**(1/2): p. 47-50.
91. Academic Development Plan Committee, U.H., *Academic Development Plan II for the University of Hawaii*. 1969 March, University of Hawaii: Honolulu. p. 170.
92. *UH Librarians Tackle Their Voluminous Job*, in *Honolulu Advertiser*. 1968 June 6: Honolulu. p. B4.
93. *Library Activities*, in *University of Hawaii Bulletin*. 1969 May, University of Hawaii: Honolulu. p. 384-5.
94. *UH Plans Honor for 2 Ex-Officials*, in *Honolulu Advertiser*. 1968 December 12: Honolulu. p. D13.
95. Dawrs, S. Dept. History, *Spec Coll*. 2006 7/06 [cited 2006; Available from: On Library intranet, under Members, library-history-1, spec-coll].
96. Evinger, J., *U.S. Envoy to NATO Gets Post*, in *Honolulu Advertiser*. 1969 April 26: Honolulu. p. A1.
97. *Libraries and Budgets*, in *Honolulu Star-Bulletin*. 1973 June 18: Honolulu. p. A20.
98. Evinger, J., *UH Library Dedicated in Ceremony*, in *Honolulu Advertiser*. 1970 March 17: Honolulu. p. A4.
99. Smith, F.P., C. Ching, and P. Wermager. *Hawaii-Pacific Chapter History - From Coconuts to Bytes: The Hawaii Experience*. 2000 12/18/2000 [cited 2006; Available from: <http://www.mlanet.org/about/history/unit-history/hawaii.html>].

100. Knaefler, T.K., *Instant Librarian for Hawaii MDs*, in *Honolulu Star-Bulletin*. 1973 March 28: Honolulu. p. A10.
101. Gereben, J., *UHPA Wins Election*, in *Honolulu Star-Bulletin*. 1974 October 24: Honolulu. p. A10.
102. Altonn, H., *UH Team Helps Discover Particle*, in *Honolulu Star-Bulletin*. 1976 January 7: Honolulu. p. A12.
103. *Summer Bulletin 2006*, in *University of Hawaii Bulletin*. 2006 Summer, University of Hawaii Honolulu. p. 15.
104. Takayama, G., *Book Thefts Rise at UH's Hamilton Library*, in *Honolulu Star-Bulletin*. 1976 September 9: Honolulu. p. C1.
105. *Library at UH Ranks in Middle Nationally*, in *Honolulu Star-Bulletin*. 1980 March 6: Honolulu. p. A11.
106. Chantiny, M. *Dept. History, Systems DNS*. 2006 6/19/06 [cited 2006; Available from: On the Library intranet under Members, library-history-1, systems.
107. Tenopir, C. *Bio and Vita*. 2006 6/8/2006 [cited December 20, 2006]; Available from: <http://web.utk.edu/~tenopir/>.
108. Takayama, G., *5-Year-Old Building at UH is Crumbling*, in *Honolulu Star-Bulletin*. 1976 October 19: Honolulu. p. A1.
109. *UH May Demolish Crumbling F-Tower*, in *Honolulu Star-Bulletin*. 1979 December 4: Honolulu. p. A3.
110. Glauberman, S., *Thomas H. Hamilton Library Use Up*, in *Honolulu Star-Bulletin*. 1979 December 13: Honolulu. p. A20.
111. Yim, S., *The Giant Crackseed of Manoa*, in *Honolulu Star-Bulletin*. 1981 June 23: Honolulu. p. C1.
112. Watanabe, J., *Satoru Abe's 'Adam' Is Home Again at UH*, in *Honolulu Star-Bulletin*. 1982 May 11: Honolulu. p. A1.
113. Morita, S., *UHPA Lays Claim to First 'Legal' Public Employee Strike*, in *Honolulu Star-Bulletin*. 1983 November 21: Honolulu. p. A6.
114. Watanabe, J., *UH Librarian Has Space Problem*, in *Honolulu Star-Bulletin*. 1984 September 14: Honolulu. p. A12.
115. Altonn, H., *UH High in Research Funding*, in *Honolulu Star-Bulletin*. 1985 July 2: Honolulu. p. A5.
116. *Workers Clear Fallen Asbestos from UH Library*, in *Honolulu Star-Bulletin*. 1986 November 17: Honolulu. p. A8.
117. Taylor, L., *Drawing on a Gift of Prints*, in *Honolulu Star-Bulletin*. 1986 November 17: Honolulu. p. B1.
118. Christensen, J., *Some Fear Asbestos Removal*, in *Honolulu Star-Bulletin*. 1987 January 27: Honolulu. p. A3.
119. Hanna, R., *email to Wermager*. 2006 December 14: Honolulu. p. 1.
120. *A Generation of Statehood*, in *Honolulu Star-Bulletin*. 1989 February 21: Honolulu. p. S2-35.
121. Perez, R., *UH Faculty Contract Overwhelmingly Ratified*, in *Honolulu Star-Bulletin*. 1989 September 15: Honolulu. p. A1.
122. Altonn, H., *NASA Selects UH to get Special Help in Space Education*, in *Honolulu Star-Bulletin*. 1990 September 15: Honolulu. p. A3.
123. Ohira, R. and P. Mayer, *UH Delivers Bargain Education*, in *Honolulu Star-Bulletin*. 1990 September 12: Honolulu. p. A1.
124. *History of Internet Explorer*. 2007 [cited 2007 February 17, 2007]; Available from: http://en.wikipedia.org/wiki/History_of_Internet_Explorer.

125. Mochida, P. and R. Neufang. *Teaching Internet Skills to Information Professionals*. in *INET'96 Sixth Annual Conference of the Internet Society*. 1996 June 22-28. Montreal, Canada.
126. Takeuchi, F.K., *WWII Papers Show Evictions of Islanders*, in *Honolulu Star-Bulletin*. 1991 August 7: Honolulu. p. A1.
127. Wermager, P., *Faculty Tenure and Promotion Application (1977 and 2001)*. 1997,2001, University of Hawaii at Manoa Library: Honolulu.
128. Barayuga, D., *UH Librarians Turning Tide Against Bugs*, in *Honolulu Star-Bulletin*. 1993 September 30: Honolulu. p. A3.
129. Barayuga, D., *Hamilton Library Running Out of Space for Books and People*, in *Honolulu Star-Bulletin*. 1993 October 29: Honolulu. p. A3.
130. Wermager, P., *Review of Proposed PhD in Nursing; Memo to University Librarian John Haak*. 1997 October 1: Honolulu. p. 2.
131. Dator, J., *First Class? UH Can be Good, But not Great*, in *Honolulu Star-Bulletin*. 1999 January 23: Honolulu. p. B1.
132. Omandam, P., *UH Libraries Cut Off Public Borrowing*, in *Honolulu Star-Bulletin*. 1995 August 24: Honolulu. p. A3.
133. Omandam, P., *Relief From the Squeeze*, in *Honolulu Star-Bulletin*. 1997 June 20: Honolulu. p. A1.
134. Omandam, P., *Library Addition Finally Gets Underway*, in *Honolulu Star-Bulletin*. 1998 October 20: Honolulu. p. A4.
135. Solyom, B., *Joyce Watson, 1936-2001*, in *Ke Kukini*. 2002 Spring. p. 7.
136. *Year 2000 Problem*. Wikipedia 2007 11/12/2006 [cited 2007; Available from: <http://en.wikipedia.org/wiki/Y2K>].
137. Morris, N. *A History of the Libraries, University of Hawaii at Manoa, Revised*. [Revision of 2001 article in International Dictionary of Library Histories] 2006 [cited 2006; Available from: [On the Library intranet under Members, library-history-1, revised](#)].
138. Ehrhorn, J., *Hamilton Library Addition and Renovation*, in *Ke Kukini*. 2002 Spring. p. 2.
139. Ehrhorn, J. *Building News Update #1*. 2000 8/10/2000 [cited 2006; Available from: <http://www2.hawaii.edu/~library/news1.htm>].
140. *UHM Celebrates Completion of Construction and Renovations to Hamilton Library*. 2002 November 6, 2002 [cited 2006; UH News]. Available from: <http://www.hawaii.edu/cgi-bin/uhnews?20021107073352>.
141. Saeki, L.A., *Email to Wermager*. 2006 December 19, University of Hawaii Library: Honolulu. p. 1.
142. NOAA. *Manoa Valley Flood, October 30, 2004*. 2004 [cited 2007; Available from: <http://www.prh.noaa.gov/hnl/pages/events/ManoaFlood20041030/>].
143. Brown, J., *Class Narrowly Escapes Flood*. HLA Newsletter, 2004 December. 2(3): p. 1,3.
144. Leidermann, M., *Students in Library Fled Floodwaters*, in *Honolulu Advertiser*. 2004 November 2: Honolulu. p. B4.
145. Gima, C., *UH Main Library Reopens*, in *Honolulu Star-Bulletin*. 2005 March 20: Honolulu. p. A3.
146. Brannon, J., *Small Fires Set in UH Library*, in *Honolulu Advertiser*. 2005 April 7: Honolulu. p. B1.
147. Inouye, D. *Inouye Announces that Senate Passes Flood Relief Aid for University of Hawaii, and Manoa Valley*. 2006 4/21/2005 [cited 2005; Available from: <http://inouye.senate.gov/~inouye/05pr/20050421pr01.html>].
148. *John Awakuni Named State Employee of the Year*. 2005 10/12/05 [cited 2006; UH News]. Available from: <http://www.hawaii.edu/cgi-bin/uhnews?20051012142736>.

149. *UH Officer Is Employee of Year*, in *Honolulu Star-Bulletin*. 2005 October 16: Honolulu. p. A23.
150. Perushek, D., *email to Library*. 2006 August 28: Honolulu. p. 1.
151. Sage, J., *Paula Mochida Returns as Associate University Librarian*. Ke Kukini, 2006 Fall(11): p. 2.
152. *A Census of College Costs*. Time, 2006 November 6: p. 18.
153. *University of Hawaii at Manoa Centennial*. 2007, University of Hawaii at Manoa: Honolulu. p. 12.

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Most of the Hamilton Flood pictures are from the Library Flood Website or Susan Murata's flood pictures (CD in University Archives).

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- p. 8. College building: *Hawaii Collegian*, Honolulu, June 1910, p. 2.
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- p. 13. Yap: *The Story of Hawaii And Its Builders*, ed. George F. Nellist, 1925, p. 909.
- p. 20. Stroven: photograph of Stroven's portrait by Paul Wermager.
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